

IN THE SUPREME COURT OF FLORIDA

CITIZENS OF THE STATE OF)	
FLORIDA,)	
)	CASE NO. SC18-213
Appellant,)	
v.)	Lower Tribunal No. 20180007-EI
)	
JULIE IMANUEL BROWN,)	
ETC., ET AL.)	
)	
Appellees.)	

**APPENDIX TO APPELLEE FLORIDA POWER & LIGHT COMPANY'S
ANSWER BRIEF**

John T. Butler
Florida Bar No. 283479
john.butler@fpl.com
María José Moncada
Florida Bar No. 773301
Maria.moncada@fpl.com
FLORIDA POWER & LIGHT
COMPANY
700 Universe Boulevard
Juno Beach, FL 33408
Tel.: (561) 304-5795

Stuart H. Singer
Florida Bar No. 377325
ssinger@bsflp.com
ftleserve@bsflp.com
BOIES SCHILLER FLEXNER LLP
401 E Las Olas Blvd., Suite 1200
Fort Lauderdale, FL 33301
Tel.: (954) 377-4201

*Counsel for Appellee
Florida Power & Light Company*

RECEIVED, 07/23/2018 06:23:41 PM, Clerk, Supreme Court

Pursuant to Rule 9.220, Florida Rules of Appellate Procedure, Florida Power & Light Company respectfully submits this Appendix to Florida Power & Light Company's Answer Brief containing the Commission Order appealed and key regulatory documents cited in Florida Power & Light Company's Answer Brief but not already included in the OPC Appendix, for ease of reference.

INDEX

	<u>Page No.</u>
<i>In re: Environmental cost recovery clause,</i> Order No. PSC-2018-0014-FOF-EI (January 5, 2018)	4
<i>Hearing Exhibit No. 3:</i> 09/11/1971 U.S. Department of Justice (“USDOJ”) Settlement Agreement	36
<i>Hearing Exhibit No. 66:</i> Composite Exhibit	49
<i>Hearing Exhibit No. 74:</i> 11/18/2009 Order PSC 09-0759-FOF-EI	83
<i>Hearing Exhibit No. 79:</i> Testimony and Exhibits of Labouve 2009, 2013, 2015, 2016	107
<i>In re: Petition for approval of new environmental programs for cost recovery through the Environmental Cost Recovery Clause by Tampa Electric Company, Order No. PSC-00-2104-PAA-EI, Docket No. 001186-EI (F.P.S.C. Nov. 6, 2000)</i>	<i>173</i>
<i>In re: Environmental Cost Recovery Clause, Order No. PSC-05-1251-FOF-EI, Docket No. 050007-EI (F.P.S.C. Dec. 22, 2005)</i>	<i>180</i>
<i>In re: Petition for Approval of New Environmental Program for Cost Recovery through Environmental Cost Recovery Clause by Tampa Electric Company, Order No. PSC-07-0499-FOF-EI, Docket No. 050958-EI (F.P.S.C. June 11, 2007)</i>	<i>193</i>
<i>In re: Environmental Cost Recovery Clause, Order No. PSC-07-0922-FOF-EI, Docket No. 070007-EI (F.P.S.C. Nov. 16, 2007)</i>	<i>203</i>

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Environmental cost recovery clause.

DOCKET NO. 20180007-EI
ORDER NO. PSC-2018-0014-FOF-EI
ISSUED: January 5, 2018

The following Commissioners participated in the disposition of this matter:

JULIE I. BROWN, Chairman
ART GRAHAM
RONALD A. BRISÉ
DONALD J. POLMANN
GARY F. CLARK

APPEARANCES:

R. WADE LITCHFIELD, ESQUIRE, Vice President and General Counsel, JOHN T. BUTLER, ESQUIRE, Assistant General Counsel – Regulatory, and JESSICA A. CANO, ESQUIRE, Senior Attorney, 700 Universe Boulevard, Juno Beach, Florida 33408-0420

On behalf of Florida Power & Light Company (FPL or Company)

DIANNE M. TRIPLETT, ESQUIRE, Deputy General Counsel, 299 First Avenue North, St. Petersburg, Florida 33701, and MATTHEW R. BERNIER, ESQUIRE, Associate General Counsel, 106 East College Avenue, Suite 800, Tallahassee, Florida 32301

On behalf of Duke Energy Florida, LLC. (DEF)

JAMES D. BEASLEY, ESQUIRE, AND J. JEFFRY WAHLEN, ESQUIRE, Ausley McMullen, P. O. Box 391, Tallahassee, Florida 32302

On behalf of Tampa Electric Company (TECO)

JEFFREY A. STONE, ESQUIRE, Gulf Power Company, One Energy Place, Pensacola, FL 32520-0100, RUSSELL A. BADDERS, ESQUIRE and STEVEN R. GRIFFIN ESQUIRE, Beggs & Lane, P.O. Box 12950, Pensacola, FL 32591-2950

On behalf of Gulf Power Company (Gulf)

STEPHANIE A. MORSE, ESQUIRE, Associate Public Counsel, PATRICIA A. CHRISTENSEN, ESQUIRE, Associate Public Counsel, and CHARLES REHWINKEL, ESQUIRE, Deputy Public Counsel, c/o The Florida Legislature, 111 West Madison Street, Room 812, Tallahassee, Florida 32399-1400

On behalf of the Citizens of the State of Florida (OPC)

I CERTIFY THAT THIS IS A TRUE AND
CORRECT COPY OF THE ORIGINAL
DOCUMENT THAT WAS FILED WITH THE
FLORIDA PUBLIC SERVICE COMMISSION
BY: Carlotta S. Stauffer
CARLOTTA S. STAUFFER, COMMISSION CLERK
(or Office of Commission Clerk designee)

JON C. MOYLE, JR., ESQUIRE, and KAREN PUTNAL, ESQUIRE, Moyle Law Firm, P.A., 118 North Gadsden Street, Tallahassee, FL 32312
On behalf of Florida Industrial Power Users Group (FIPUG)

GEORGE CAVROS, ESQUIRE, 120 E. Oakland Park Boulevard, Suite 105, Fort Lauderdale, Florida, 33334
On behalf of the Southern Alliance for Clean Energy (SACE)

CHARLES W. MURPHY, ESQUIRE, STEPHANIE A. CUELLO, ESQUIRE, AND MARGO A. DUVAL, ESQUIRE, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
On behalf of the Florida Public Service Commission (Staff)

MARY ANNE HELTON, ESQUIRE, Deputy General Counsel, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
Advisor to the Florida Public Service Commission

KEITH HETRICK, ESQUIRE, General Counsel, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
Florida Public Service Commission General Counsel

FINAL ORDER
APPROVING PROJECTED EXPENDITURES AND TRUE-UP
AMOUNTS FOR ENVIRONMENTAL COST RECOVERY

BY THE COMMISSION:

BACKGROUND

In this Environmental Cost Recovery Clause (ECRC) docket, the Florida Public Service Commission (Commission) reviews petitions for environmental cost recovery filed by Florida Power and Light Company (FPL or Company), Duke Energy Florida (DEF), Gulf Power Company (Gulf), and Tampa Electric Company (TECO), pursuant to Section 366.8255, Florida Statutes (F.S.). The Office of Public Counsel (OPC), the Southern Alliance for Clean Energy (SACE), Florida Industrial Power Users Group (FIPUG), and White Springs Agricultural Chemicals, Inc., d/b/a PCS Phosphate – White Springs (PCS) were intervenors in this docket. As part of our continuing ECRC proceedings, a hearing was held in this docket on October 25-27, 2017. PCS was excused from the hearing.

The parties have resolved all issues *except* Issues 10A-10E. The contested issues are discussed at Sections I-V of this Order. Our staff, DEF, FPL, Gulf, and TECO supported the proposed stipulation of Issues 1-9, 10F-G, 11, 12A-C, and 13, which are set forth in Attachment

A of this Order. SACE, PCS, and FIPUG took no position on the stipulations. OPC took no position on all of the stipulations except for Issue 10G, which it did not oppose and affirmatively stated that “OPC does not object to the process proposed by FPL.” We approved the stipulations by a bench vote at the October 25, 2017 hearing. The contested issues relate to the FPL Turkey Point Cooling Canal Monitoring Plan Project (TP-CCMP or Monitoring Plan). To the extent that our decisions regarding the Monitoring Plan change the amount approved for recovery, the numbers for FPL, identified in Attachment A by an asterisk, may need to be “trued- up” in a subsequent ECRC filing. A non-exhaustive list of acronyms related to the contested issues is included in this Order as Attachment B.

FPL operates the Turkey Point Power Plant (Turkey Point), which has multiple generating units, including Units 3 and 4, which are nuclear steam units. For cooling these generating units, FPL utilizes a 5,900 acre cooling canal system (CCS) that was placed in service in 1973. By Order No. PSC-09-0759-FOF-EI (Approval Order),¹ issued on November 18, 2009, we approved the Monitoring Plan for cost recovery through the ECRC.

On September 2, 2016, FPL filed projection testimony in the ECRC docket for the Monitoring Plan that included a request for recovery of costs associated with recent actions of two of its environmental regulators. FPL entered into a Consent Agreement (CA) with the Miami-Dade Department of Environmental Resource Management (DERM) on October 7, 2015, which was amended on August 15, 2016, and referred to as the Consent Agreement Addendum (CAA). On June 20, 2016, FPL also entered into a Consent Order (CO) with the Florida Department of Environmental Protection (FDEP). Collectively, costs associated with the CA, CAA, and CO are referred to in this Order as the Monitoring Plan Disputed Costs.

By Order No. PSC-16-0535-FOF-EI, issued on November 22, 2016, we deferred consideration of issues associated with the Monitoring Plan Disputed Costs until 2017, directed FPL to file additional information in its 2017 Actual/Estimated Testimony in this docket, and established desired time periods for intervenor, staff, and rebuttal testimony filing dates.²

On January 3, 2017, we established Docket 20170007-EI.³ OPC and FIPUG retained party status in the docket, and SACE was granted intervention. Collectively, OPC, FIPUG, and SACE are referred to in this Order as the Intervenors. DEF, TECO, Gulf, and PCS participated in this docket, but did not take positions on the contested issues.

On November 13, 2017, briefs were filed by FPL, OPC, and SACE regarding the contested issues. FIPUG filed a notice of joinder with OPC’s brief, and the two are referred to in this Order collectively as OPC/FIPUG. As part of its November 13, 2017 filing, SACE filed proposed findings of fact and conclusions of law. Such filings are anticipated by Chapter 120, F.S., the Uniform Rules of Procedure, and our procedural orders. We have considered SACE’s

¹Issued November 18, 2009, in Docket No. 090007-EI, *In re: Environmental cost recovery clause*.

²In Docket No. 160007-EI, *In re: Environmental cost recovery clause*.

³Order No. PSC-17-0007-PCO-EI, issued January 3, 2017, in Docket No. 170007-EI, *In re: Environmental cost recovery clause*.

filings, as we would any other post-hearing filing. On December 12, 2017, the FPL Monitoring Plan Disputed Costs were addressed at our Agenda Conference.

We have jurisdiction over this subject matter pursuant to Section 366.8255, F.S.

ANALYSIS and DECISION

The stipulations of Issues 1-9, 10F-G, 11, 12A-C, and 13, as set forth in Attachment A of this Order, are approved. The contested issues address the FPL Monitoring Plan Disputed Costs, and are discussed below at Sections I-V.

I. ECRC Recovery of FPL's Prudently Incurred Costs, if any, Associated with the CO, CA, and CAA

A. Parties' Arguments

1. FPL

FPL asserts that it is required to comply with the 2015 CA, 2016 CO, and 2016 CAA, and that costs FPL has prudently incurred as a result of these requirements are recoverable pursuant to Section 366.8255, F.S. FPL argues that there is no legal basis to disallow costs determined to be prudently incurred to comply with environmental requirements.

FPL asserts that as part of the Turkey Point Uprate Project, it was required by its Conditions of Certification (COC), specifically Section IX and X, to implement monitoring of various state surface and ground waters subject to the regulation of the FDEP, DERM, and South Florida Water Management District (SFWMD). As part of implementing the COC, FPL sought, and we granted approval of the Monitoring Plan in November 2009. FPL argues that it continued to meet its regulatory requirements of monitoring and, as part of that monitoring process, in April 2013, SFWMD determined that saline water had moved into water resources outside of the plant's boundaries. FPL was instructed to begin consultations with SFWMD to "identify measures to mitigate, abate, or remediate." FPL states that it then began working with its environmental regulators to evaluate options which resulted in an Administrative Order (AO) being issued by FDEP in December 2014.

FPL argues that one of its regulators, DERM, was unsatisfied with the FDEP's AO. As a result, DERM challenged the AO and issued a Notice of Violation (NOV) in October 2015. The challenge to the AO resulted in a Final Administrative Order that led to the FDEP issuing a separate NOV in April 2016. FPL asserts that both DERM's and the FDEP's NOV's were resolved by entering into the CO in June 2016 and the amended CAA in August 2016. Further, FPL contends that the actions required by the CAA and CO, which result in the Monitoring Plan Disputed Costs, are direct consequences of FPL's COC.

FPL alleges that it is overly simplistic for the Intervenor Parties to claim that the NOV's are violations of law. First, FPL contends that the environmental standards cited by all three of its environmental regulators are narrative standards that require the agency's judgement to determine if a violation has occurred, and that there is no bright line defining a violation of law. Second, FPL argues that it operated the CCS in full compliance with its regulations and that the environmental degradation is an unintended consequence. Last, FPL asserts that the NOV's are not the sole reason for the Monitoring Plan Disputed Costs, and that FPL would be obligated by its COC to perform the same actions.

FPL also argues that OPC is mistaken regarding this Commission's discretion regarding recovery, and that if we approve the Company's activities, we must allow cost recovery through the ECRC pursuant to Section 366.8255, F.S.

2. OPC/FIPUG

OPC/FIPUG assert that the jurisdictional portion of approximately 95 percent of the total O&M and capital expenditures of \$132,577,031 in remediation costs to clean up the Biscayne Aquifer should be disallowed.

OPC/FIPUG argue that FPL has not met its burden of proof to be eligible for recovery of the Monitoring Plan Disputed Costs, which OPC/FIPUG refer to as the Retraction and Freshening Remediation Project (RFRP). OPC/FIPUG assert that in its original 1972 permitting, FPL was responsible for both monitoring and preventing the spread of saltwater from the CCS.

OPC/FIPUG contend that, while a Consent Order or Agreement does not preclude recovery through the ECRC, costs implementing remediation activities to correct violations of law are not eligible. OPC/FIPUG argue that FPL specifically justifies its activities by relying on the FDEP CO which resulted from an NOV. OPC/FIPUG assert that, as a result of the NOV, FPL would have been liable to the State of Florida for damage to the Biscayne Aquifer, and therefore, should not be eligible for recovery as though RFRP costs were payment of damages for unlawful conduct. OPC/FIPUG note that Section 366.8255, F.S., requires that costs must be "designed to protect the environment."

OPC/FIPUG argue that the ECRC recovery standard includes both prudence and public policy elements, and that we must be vigilant about improper efforts to recover costs through the ECRC.⁴

OPC/FIPUG state that the ECRC is an inappropriate method to recover costs associated with past harms. Instead, they contend that the clause is meant to allow recovery of costs required by new regulations to prevent future harm. OPC/FIPUG refer to our prior decisions in which we reference maintaining compliance or continuing compliance. OPC/FIPUG suggest

⁴At page 9 of OPC/FIPUG's Brief, OPC/FIPUG quote from Order No. PSC-07-0722-FOF-EI, issued September 5, 2007, in Docket No. 060162-EI., *In re: Petition by Progress Energy Florida, Inc. for approval to recover modular cooling tower costs through environmental cost recovery clause*. However, the quotation in OPC's Brief does not reflect the text of our Order. The correct text is "It is our opinion that, with respect to ECRC recovery, OPC's position restricts the eligibility of environmental costs beyond what the statute contemplates" *Id.* at 8.

that, because FPL has committed a violation and is out of compliance, FPL's costs are now ineligible under the ECRC. OPC/FIPUG acknowledge that we have allowed remediation costs before, but suggest that those circumstances were with specific regulations that are not similar to the circumstances presented by the Monitoring Plan Disputed Costs. OPC/FIPUG further argue that a Consent Order or Agreement is the equivalent of an environmental regulation when it has a prospective application to abate or eliminate future harm, and that in prior instances when we have approved cost recovery for a Consent Decree, such costs covered only prospective actions.

3. SACE

SACE asserts that FPL was issued an NOV by the FDEP in 2016 and by Miami-Dade County in 2015. SACE argues that we have never allowed a utility to recover costs through the ECRC for compliance costs arising from a violation of law, and that doing so in this case would establish a dangerous precedent in future ECRC proceedings. Moreover, SACE contends that recovery of costs should not be allowed because FPL's failure to mitigate the impact of the CCS-caused hyper-saline plume before 2014 was imprudent.

SACE alleges that FPL knew, or should have known, by 1992 that the operation of the CCS was causing an adverse impact to waters adjacent to the CCS. SACE argues that FPL failed to provide information to both SFWMD and this Commission regarding the scale of the environmental impacts of the CCS. SACE contends that FPL's imprudence caused the environmental compliance requirements of the CO and CA, and therefore, cost recovery should not be allowed.

SACE alleges that FPL downplayed, or even ignored, the conclusions of annual monitoring reports that were filed with environmental regulators. SACE asserts that had environmental regulators been provided with a complete analysis of the monitoring data, FPL's Turkey Point Uprate Project might not have been approved. Therefore, the COC FPL relies upon as an environmental requirement would not have been in place.

B. Analysis

The ECRC, enacted into law in 1993, provides an investor-owned utility the opportunity to recover the costs associated with changes in environmental regulations between rate cases. The statute authorizes us to review and decide whether a utility's environmental compliance costs are recoverable through an environmental cost recovery factor. When we first implemented the provisions of Section 366.8255, F.S., we identified the criteria required to demonstrate eligibility for cost recovery under the ECRC, and interpreted the statute to have three requirements for recovery of environmental compliance costs through the clause, as detailed below:

Upon petition, we shall allow the recovery of costs associated with an environmental compliance activity if:

1. such costs were prudently incurred after April 13, 1993;

2. the activity is legally required to comply with a governmentally imposed environmental regulation enacted, became effective, or whose effect was triggered after the Company's last test year upon which rates are based; and,

3. such costs are not recovered through some other cost recovery mechanism or through base rates.⁵

Pursuant to Section 366.8255, F.S., only the utility's prudently incurred environmental compliance costs are allowed to be recovered through the ECRC.⁶ The prudence of the Monitoring Plan Disputed Costs is discussed below in Section II.

1. Timing

To be eligible for recovery under the ECRC, costs must have been prudently incurred after April 13, 1993, the effective date of Section 7, Chapter 93-35, Laws of Florida, which created Section 366.8255, F.S.⁷ This threshold date has been applied by us many times since it was originally established.⁸

No party argues, and there is no substantial evidence in the record, that the Monitoring Plan Disputed Costs were incurred prior to this date. Therefore, we find that the Monitoring Plan Disputed Costs meet the first criterion of ECRC eligibility.

2. Regulatory Requirement/Test Year

To be eligible for the ECRC, costs must be for activities that are legally required to comply with a governmentally imposed regulation that has been enacted, or become effective, or whose effect was triggered after the Company's last test year upon which rates are based. Therefore, to determine eligibility of the Monitoring Plan Disputed Costs, we must first identify the new regulations and then determine if the dates of such regulations are after the Company's last test year.

Section 366.8255 (1)(c), F.S., defines environmental laws or regulations to include "all federal, state, or local statutes, administrative regulations, orders, ordinances, resolutions, or other requirements that apply to electric utilities and are designed to protect the environment." The FDEP and DERM are state and local environmental regulators, respectively, with the

⁵Order No. PSC-94-0044-FOF-EI, issued January 12, 1994, in Docket No. 930613-EI, *In re: Petition to establish an environmental cost recovery clause pursuant to Section 366.8255, Florida Statutes, by Gulf Power Company*

⁶Order No. PSC-05-0164-PAA-EI, issued February 10, 2005, in Docket No. 041300-EI, *In re: Petition for Approval of New Environmental Program for Cost Recovery Through Environmental Cost Recovery Clause, by Tampa Electric Company.*

⁷Order No. PSC-94-0044-FOF-EI, issued January 12, 1994, in Docket No. 930613-EI, *In re: Petition to establish an environmental cost recovery clause pursuant to Section 366.0825, Florida Statutes by Gulf Power Company.*

⁸See e.g., Order No PSC-12-0493-PAA-EI, issued September 26, 2012, in Docket No 20110262-EI, *In re: Petition for approval of new environmental program for cost recovery through Environmental Cost Recovery Clause, by Tampa Electric Company.*

authority to impose requirements on FPL's operations of the CCS and other relevant plants. The CO, CA, and CAA all include specific new requirements that apply to FPL in relation to its function as an electric utility. These are primarily detailed in Sections 20 through 33 of the FDEP's CO and Sections 17 and 34 in DERM's CA, as amended by the CAA. These requirements include items such as implementing plans to meet salinity thresholds, installation and operation of freshening projects, improving thermal efficiency, and engaging in remediation projects including a recovery well system.

We have previously interpreted a Consent Decree to be a qualifying requirement under the ECRC.⁹ In another instance, we allowed ECRC cost recovery based on an agreement reached as a result of alleged violations of the Clean Air Act.¹⁰ The record reflects that without the FDEP's NOV, FPL would not have signed a Consent Order. FDEP's NOV directed FPL to enter into a Consent Order or equivalent, and FPL is engaging in the Monitoring Plan Disputed Cost activities pursuant to the CO and CA.

The CO, CA, and CAA expressly require FPL to engage in remediation activities. We have previously approved recovery of costs associated with remediation activities under the ECRC.¹¹ Based on the statutory definition, our past interpretation of the statute, and the record in this docket, we find that the CO, CA, and CAA are new environmental regulations.

FPL's most recent rate case was resolved by a settlement between many parties, including FPL and OPC, and was approved by us by Order No. PSC-16-0560-AS-EI.¹² No party argues, and there is no substantial evidence in the record, that the Monitoring Plan Disputed Costs were triggered prior to FPL's last test year upon which rates are based. Therefore, the Monitoring Plan Disputed Costs meet the second criterion of ECRC eligibility.

3. Costs Not Recovered

To be eligible for the ECRC, costs also must not be recovered through some other cost recovery mechanism or through base rates. No party argues, and there is no substantial evidence in the record, that the Monitoring Plan Disputed Costs are being recovered through base rates or an alternate clause mechanism. Therefore, we find that the Monitoring Plan Disputed Costs meet the third criterion of ECRC eligibility.

⁹Order No. PSC-07-0499-FOF-EI, issued June 11, 2007, in Docket No. 050958-EI, *In re: Petition for Approval of New Environmental Program for Cost Recovery through Environmental Cost Recovery clause by Tampa Electric Company*.

¹⁰Order No. PSC-00-2104-PAA-EI, issued November 6, 2000, in Docket No. 001186-EI, *In re: Petition for approval of new environmental programs for cost recovery through the Environmental Cost Recovery Clause by Tampa Electric Company*.

¹¹Order No. PSC-05-1251-FOF-EI, issued December 22, 2005, in Docket No. 20050007-EI, *In re: Environmental Cost Recovery Clause*.

¹²Order No. PSC-16-0560-AS-EI, issued December 15, 2016, in Docket No. 160021-EI, *In re: Petition for rate increase by Florida Power & Light Company*.

C. Decision

Based on the foregoing, FPL shall be allowed to recover the Monitoring Plan Disputed Costs, if prudently incurred, through the ECRC. The Monitoring Plan Disputed Costs are costs incurred after the inception of the ECRC and are not being recovered through another clause mechanism or base rates. FPL is subject to new governmentally imposed requirements enacted after FPL's last test year. Whether the Monitoring Plan Disputed Cost activities are prudent is addressed immediately below in Section II.

II. Prudence of FPL Costs Associated with the CO, CA, and CAA

A. Parties' Arguments

1. FPL

FPL argues that the Company has prudently operated the CCS in compliance with its permits and applicable regulations and has cooperated with environmental regulators throughout its service life. FPL asserts that it has not violated the operational requirements in its environmental permits. FPL argues that, pursuant to regulatory requirements, it engaged in increased monitoring that resulted in the determination that corrective action was required, and that the Company is now engaging in corrective actions. FPL contends that the Monitoring Plan Disputed Costs are prudently incurred and that it is inappropriate for the Intervenor Parties to second guess the requirements of the Company's environmental regulators. FPL argues that the environmental actions required by the CO, CA, and CAA have significant overlap and that they require similar monitoring and corrective actions.

FPL avers that OPC failed to identify any imprudent management decisions that resulted in the Monitoring Plan Disputed Costs. FPL contends that the Company operated the system in compliance with regulations, which is acknowledged by its environmental regulators. FPL asserts that OPC's arguments are made with the benefit of hindsight using FPL's groundwater monitoring reports, that the COC acknowledges the existence of a hyper-saline plume, and that the enhanced monitoring requirements were the result of the Company's environmental regulators having insufficient data to determine what actions, if any, would need to be taken.

FPL specifically defends the prudence of the Recovery Well System (RWS) and related costs as a well understood remediation method that was the result of consensus between FPL and its environmental regulators. FPL argues that OPC's review of the RWS impacts on the hyper-saline plume uses invalid assumptions and misinterprets the modeling done to analyze it. FPL acknowledges that while uncertainty exists regarding the impact upon some layers of the aquifer, the operation of the RWS is subject to further review of the Company's environmental regulators and should move forward. FPL asserts that the need for future modification of its corrective actions is appropriate and does not undermine a determination of prudence for those activities. FPL asserts that regardless of the impact of the RWS, it is a specific requirement by the CO and CA and the associated modeling has been approved by DERM.

2. OPC/FIPUG

OPC/FIPUG argue that the costs of the Retraction Well System are remedial in nature and should not be imposed on FPL's customers. OPC/FIPUG assert that FPL's management knew or should have known that its actions in operating the CCS were creating material harm to the Biscayne Aquifer. OPC/FIPUG aver that FPL's actions and inaction over time placed the Company in violation of law and, therefore, constitute imprudence. OPC/FIPUG conclude that the costs of addressing the consequences of FPL's imprudence are not appropriate costs that should be borne by customers.

OPC/FIPUG contend that the build-up of salt from the CCS was foreseeable and would occur absent the attention and intervention by FPL. OPC/FIPUG argue that FPL failed to take actions on its own to prevent harm despite being required to monitor its wastewater and propose modifications to prevent such harm. OPC/FIPUG argue that FPL followed faulty advice from consultants and failed to follow recommendations to monitor trends and verify assumptions. OPC/FIPUG contend that OPC's observations are not hindsight, but are consistent with FPL's historic obligations under its environmental agreements. OPC/FIPUG also argue that FPL failed to prudently plan and execute tasks to avoid foreseeable damage, and that in the past, this Commission has found such failure to be imprudent.

OPC/FIPUG assert that FPL broke the law by violating groundwater protection rules and the Company's permit conditions causing damage to the aquifer, and that FPL is attempting to recover repair costs through customers for its violations. OPC/FIPUG argue that it is FPL's responsibility to pay for damages caused by its poor management of the situation that allowed the damage to occur. OPC/FIPUG contend that costs to remediate harm are ineligible for cost recovery through the ECRC (or any other mechanism) because of FPL's ability to foresee harm, if not violations of law, caused by the Company's operation of the CCS.

OPC/FIPUG aver that it is inappropriate for FPL to suggest that it relied upon environmental regulators to provide the requirement to act to address the damage caused by operation of the CCS. OPC/FIPUG argue that because FPL was in possession of the data and did not put forward any testimony from a manager of the water monitoring regulatory program, it has failed to meet its burden of proof. OPC/FIPUG assert that given the three-year lapse of reporting by FPL, not resulting in any action by SFWMD, that the regulator was not actively monitoring the environmental situation, and therefore, could not be relied upon to provide a requirement to act. OPC/FIPUG argue that reliance on the regulator's guidance was at the Company's risk and inappropriate, given that the regulator relied upon the Company's data and analysis.

OPC/FIPUG contend that the \$1.5 million escrow payment required by the CO is akin to a donation, that the funds might not be used towards mitigation of saltwater intrusion caused by FPL, and therefore, should be ineligible for recovery. Furthermore, OPC/FIPUG argue that land donations required by the CO, while not sought for recovery at this time, might result in a below market value transaction, and that such losses should be reviewed in a future proceeding and not determined at this time.

3. SACE

SACE asserts that: customers should not have to pay for FPL's mistakes; FPL knew or should have known that the CCS was causing an underground hyper-saline contamination plume spreading from its Turkey Point plant property by 1978, and certainly by 1992 at the latest; FPL failed to take any action to mitigate the impacts of the CCS on the Biscayne Aquifer (a G-II water source) until 2014. SACE argues that a prudent utility manager would have acted promptly and proactively well before 2014 to mitigate and/or remediate the growing hyper-salinity contamination plume outside the CCS boundary.

SACE argues that FPL failed to provide information to both SFWMD and this Commission regarding the scale of the environmental impacts of the CCS. SACE contends that FPL's imprudence caused the environmental compliance requirements of the CO and CA, and therefore, the Company should not be allowed cost recovery.

SACE argues that FPL is imprudent by its inaction because a reasonable utility manager would have attempted corrective actions prior to 2014, instead of failing to act despite having information about the environmental damage. SACE contends that FPL's failure to act allowed the damage to increase in size and concentration. SACE asserts that as late as 2010, FPL consultants provided a feasibility analysis that identified a solution that would have addressed the hyper-saline conditions within three years, but the Company failed to act.

SACE argues that FPL intentionally misled regulators by failing to provide SFWMD with reports for several years, and when those reports were provided, failed to provide analysis regarding the effectiveness of the Company's actions in preventing environmental damage, and instead attributed the greater salinity to seasonal conditions. SACE asserts that had environmental regulators been provided with a complete analysis of the monitoring data, FPL's Turkey Point Uprate Project might not have been approved; thereby negating the COC FPL relies upon as an environmental requirement. Moreover, SACE argues that FPL intentionally misled this Commission regarding the potential for mitigation measures in our review of the Monitoring Plan.

SACE alleges that the overall regulatory process associated with the CCS is poor, with FPL failing to provide monitoring data, using poor monitoring standards, and co-writing its AO which was deficient of charges. SACE argues that there was no provision in any of the Company's agreements with regulators that prevented FPL from altering the operation of the CCS, improving its monitoring and analysis, or proactively engaging its regulators regarding the need for corrective action.

B. Analysis

1. Standard

Pursuant to Section 366.8255, F.S., this Commission “shall allow recovery of the utility's prudently incurred environmental compliance costs.”¹³ Environmental compliance costs include “all costs or expenses incurred by an electric utility in complying with environmental laws or regulations.”¹⁴ As discussed at Section I of this Order, FPL incurred the Monitoring Plan Disputed Costs in response to new environmental requirements.

Because there are varying time periods in which costs were, or are to be incurred, we must apply separate standards of review to the Monitoring Plan Disputed Costs. This is consistent with our decision when we first addressed the ECRC:

We shall not make a specific finding of prudence for any activity included in Gulf's petition at this time. There are several reasons for this. First, many of the costs included in Gulf's petition are based on projections, and some of the projects have not yet been implemented. Thus, it is premature to establish prudence for a project that has not been completed. Second, the environmental cost recovery clause, like the fuel cost recovery clause, will be an on-going docket involving trueing-up projected costs. We retain jurisdiction in the fuel cost recovery clause because of the true-up provisions associated with fuel filings.¹⁵

FPL's Witness Deaton testified in support of FPL's actual costs for 2016, actual/estimated costs for 2017, and projected costs for 2018. As 2015 and 2016 represent actual expenditures by FPL, these are subject to a full prudence determination at this time. However, 2017 and 2018 Monitoring Plan Disputed Costs cannot be determined as prudent or imprudent. Instead we subject these costs to a reasonableness test for inclusion in clause recovery, with prudence to be determined in a future ECRC proceeding as part of the traditional true-up mechanism.

FPL is currently recovering costs through the ECRC factor that include the Monitoring Plan Disputed Costs pursuant to a stipulation approved at the October 25, 2017 evidentiary hearing. Any adjustments or modifications we make regarding the disputed issues shall be addressed as a true-up in a future ECRC proceeding. The allocation between O&M and capital is addressed separately in this Order in Section IV, and may also impact the annual amount for cost recovery.

2. Activities

As discussed above in Sections I.B.-C., the 2015 CO, 2016 CA, and 2016 CAA introduce new regulatory requirements and are therefore eligible for potential recovery through the ECRC

¹³Section 366.8255, Florida Statutes at (2).

¹⁴*Id.* at (1)(d).

¹⁵Order No. PSC-94-0044-FOF-EI, issued January 12, 1994, in Docket No. 930613-EI, *In re: Petition to establish an environmental cost recovery clause pursuant to Section 366.8255, Florida Statutes by Gulf Power Company.*

subject to a prudency review. As part of this review, we must analyze the Company's activities leading up to the CO, CA, and CAA. If prudently managed prior to the issuance of the CO, CA, and CAA, we must review whether FPL's expenditures for compliance are prudent and reasonable for recovery through the ECRC.

a. Activities Prior to New Requirements

The Intervenor asserts that FPL was imprudent because it either knew or should have known about deteriorating environmental conditions, and that FPL should have taken action prior to the requirements of the CO, CA, and CAA. We review these assertions below.

FPL's Witness Sole outlined FPL's compliance with its monitoring requirements since the start of the Company's operation of the CCS, including well and surface water monitoring and quarterly reports. Witness Sole testified that monitoring data was provided to SFWMD on at least an annual basis. FPL's Witness Sole and OPC's Witness Panday agree that a three year gap in providing monitoring reports existed between 2005 and 2007, and was resolved in 2008. SFWMD did not take additional action once the monitoring oversight had been corrected.

Neither the FDEP nor the DERM NOV identified attempts to mislead or failure to provide data as a violation. The FDEP NOV identifies Rule 62-520.400, Florida Administrative Code, and the DERM NOV identifies Section 24-42(3) of the Code of Miami-Dade County, both of which address the water quality criteria.

FPL's Witness Sole asserts that, with the exception of the NOVs received from the FDEP and DERM, FPL has operated the CCS in compliance with its regulatory permits. OPC's Witness Panday agreed that at no time did SFWMD direct the utility to engage in consultation prior to its April 16, 2013 letter requesting consultation. The data collected during the three years was available to FPL's environmental regulators prior to SFWMD's letter requesting consultation. The record indicates that the regulatory bodies responsible for water quality were sufficiently informed of the condition of the Biscayne Aquifer, and no substantial evidence was provided that FPL intentionally withheld evidence or submitted false data.

OPC's Witness Panday argues that, based on its monitoring reports that showed hypersalinity outside the boundaries of the CCS, FPL should have known, as early as 1990, that the salinity within the CCS exceeded the maximum level proposed in the 1978 Dames and Moore Report. Witness Panday asserts that the long-term trends were unmistakable signs that damage was occurring. Witness Panday alleges that by at least 1992, FPL should have known that the CCS was causing harm, but that FPL willfully or carelessly ignored these results. Witness Panday alleges that by failing to follow its experts' advice to track salinity changes, FPL failed in its obligations.

FPL's Witness Sole argues that if FPL had acted without prior direction from an environmental regulator, OPC or another party could have argued against cost recovery. We agree with this assertion because a clear governmental requirement is necessary for recovery of costs through the ECRC.

The Intervenor argues that FPL should have engaged in action prior to the CO, CA, and CAA; however, no substantial evidence was provided in the record as to what actions should have been taken and the potential alternatives or cost savings measures that FPL could or should have implemented prior to engaging in the activities that resulted in the Monitoring Plan Disputed Costs. The record indicates that FPL adhered to the monitoring requirements and was under the continuous oversight of environmental regulators from the inception of the power plant in the 1970s; these regulators included FDEP, DERM, and SWFMD. No substantial evidence was provided that FPL intentionally withheld or submitted false data to environmental regulators or to this Commission. Based on our review of the record, given what FPL knew or should have known at the time, we find FPL was prudent in its actions regarding the historic operation of the CCS.

b. Compliance with New Requirements

OPC's Witness Panday argues that FPL's RWS, a requirement of the CO, CA, and CAA, will have only a marginal effect on the hyper-saline plume, and even when combined with freshening will not accomplish the retraction of the hyper-saline plume to the boundaries of the CCS. FPL's Witness Sole defends the use of the RWS as a common remediation method that was selected after evaluating other alternatives.

The CO at Section 20(c) states that FPL shall "[i]mplement a remediation project that shall include a recovery well system." Section 20(c) also contains several milestones leading to the construction of the RWS. Witness Panday agreed that DERM had approved the use of the RWS as of May 2017. Thus, regardless of the efficacy of the RWS, it is a requirement imposed by a governmental authority as part of FPL's remediation efforts.

The 2015 CO, 2016 CA, and 2016 CAA introduce a variety of new requirements for inspections, monitoring, data analysis, reporting, planning, construction, operation, and other activities associated with the operation of the CCS and remediation of environmental damage. The requirements also include a deposit of funds with the Florida Department of Financial Services and the conveyance of land to SFWMD. Excluding the escrow deposit and the land conveyance which are discussed in more detail below, we find that the Monitoring Plan Disputed Costs comply with the requirements of FPL's continued monitoring under the Monitoring Plan and the new requirements of the CO, CA, or CAA. It is not our role to determine if the requirements of the CO, CA, or CAA are appropriate or will be effective at mitigating saltwater intrusion from the CCS. The record indicates that FPL adhered to the monitoring requirements and the associated continuous oversight of FDEP, DERM, and SWFMD. In addition, no substantial evidence was presented that FPL intentionally withheld or provided false or misleading data to environmental regulators. Therefore, we find that the actual Monitoring Plan Disputed Costs for 2015 and 2016 expenditures are prudent, and that FPL's actual/estimated 2017 expenditures and projected 2018 expenditures are reasonable such that they are eligible for recovery through the ECRC.

3. Adjustments for Escrow and Land Conveyance

Section 23(c) of the CO requires FPL to deposit \$1.5 million in a Florida Department of Financial Services escrow account. FPL projected payment of the \$1.5 million is to be completed in December 2017. FPL's Witness Sole testified that these funds may be used by the DEP to address projects that do not have any relation to FPL's CCS or the related hyper-saline plume. Witness Sole also testified that the \$1.5 million is not a fine or administrative penalty. OPC/FIPUG argue that FPL failed to meet its burden of proof that the \$1.5 million deposit is a reasonable cost that will directly benefit FPL's customers. While the \$1.5 million escrow deposit is a requirement of the CO, we find that the \$1.5 million component is not associated with the operation of the CCS for the benefit of FPL's customers and that FPL failed to meet its burden of proof for the recovery of the \$1.5 million.

Regarding the land conveyance, Section 23(b) of the CO requires FPL to provide land to SFWMD if requested. OPC/FIPUG argue that approval of such a transaction should be withheld until a later review. We agree with OPC/FIPUG; thus, in this docket, we neither approve nor disapprove cost recovery for this component of the CO. An accounting review of such a land transaction would be more appropriate in the Company's next base rate proceeding.

C. Decision

Upon review, except for the \$1.5 million escrow deposit and land conveyance discussed above, we find that FPL has prudently incurred the 2015 and 2016 Monitoring Plan Disputed Costs, and that its request for 2017 and 2018 Monitoring Plan Disputed Costs are reasonable. The 2017 and 2018 Monitoring Plan Disputed Costs and removal of the \$1.5 million escrow payment are subject to true-up in future ECRC proceedings.

III. Costs Within Scope of FPL Turkey Point Cooling Canal Monitoring Plan Project

A. Parties' Arguments

1. FPL

FPL asserts that requirements for the Monitoring Plan project have progressed from monitoring to implementing corrective actions. At the time the Monitoring Plan project was approved for recovery through the ECRC in 2009, FPL made clear that such a progression was a potential outcome. FPL argues that the 2009 Order makes clear that the scope of the project extended to historic impacts of the CCS generally – not just those related to the Uprate Project. FPL contends that it provided testimony at key project expansion points and reflected incremental costs for the expansion of its compliance activities each year in its ECRC filings.

FPL asserts that in our Approval Order we acknowledged the potential for the Monitoring Plan project to include corrective actions. FPL argues that its request for the Monitoring Program

included the Conditions of Certification IX and X which contained specific language that would require FPL to engage in corrective action. FPL states that its monitoring activities in the Monitoring Program directly produced information used by its environmental regulators to determine that additional actions were necessary. FPL argues that similar activities were approved as part of the 2015 ECRC docket, specifically water delivery projects and sediment management. FPL argues that while the Approval Order states that “the eligibility of ECRC recovery for any similar project will depend on individual circumstances and shall, therefore, be considered on a case-by-case basis,” this is a reference to a potential disagreement of the location of recovery, through the ECRC or through the Nuclear Cost Recovery Clause, not that costs would be unrecoverable in general.

2. OPC/FIPUG

OPC/FIPUG contend that our Approval Order was strictly limited to monitoring impacts associated with the Turkey Point Uprate Project. OPC/FIPUG argue that the scale of the Monitoring Plan Disputed Costs compared to Monitoring Program costs requires review independent of that conducted for the Monitoring Plan in 2009. Further, OPC/FIPUG assert that the Company did not disclose the full scope of the remediation projects, and that when the Company agreed to the CA, CAA, and CO the environmental regulators did not approve specific actions such as the RWS system. OPC/FIPUG argue that the Monitoring Plan Disputed Costs are not related to the Monitoring Program and inclusion in the Monitoring Program is an attempt to evade scrutiny and the Company’s burden of proof that costs are reasonable and prudent. OPC/FIPUG note that a change of scope has been considered a new activity in prior cases, and that therefore the Monitoring Plan Disputed Costs constitute a new program, with a separate evaluation necessary for recovery. OPC/FIPUG contend that the Approval Order did not mention remediation, correction, or corrective action. OPC/FIPUG argue that the Monitoring Program should not include costs to halt and retract the hyper-saline plume as they are unassociated with the Turkey Point Uprate Project. OPC/FIPUG note that the Approval Order states that new projects would be considered on a case-by-case basis.

3. SACE

SACE argues that FPL omitted material information on its exposure to significant environmental corrective action and costs related to its operation of the CCS. SACE contends that FPL knew that the CCS-caused hyper-saline plume had pushed the saltwater interface well west of the boundary of the CCS in 2009 and that the Company’s consultants started developing remediation plans months after the Commission approved the project. SACE concludes that recovery of costs should not be allowed because FPL’s failure to mitigate the impact of CCS-caused hyper-saline plume before 2014 was imprudent.

SACE alleges that FPL was aware, or should have been aware, that measures would be required to address the hyper-saline plume prior to our approval of the Monitoring Plan. SACE argues that the Company failed to mention the potential magnitude of costs that would be associated with the CCS. SACE contends that we approved the Monitoring Plan with incomplete information due to intentional omissions by the Company.

B. Analysis

The Monitoring Plan Approval Order specifically included discussion of the potential for mitigation costs. The Monitoring Plan Approval Order included a stipulation between FPL, OPC, FIPUG, and the Federal Executive Agencies (FEA), in which OPC, FIPUG, and FEA took no position on the approval of the program. Specifically, the Monitoring Plan Approval Order states, in relevant part:

These activities will be incremental to FPL's current monitoring efforts. . . . The CCM Plan has been designed to focus on the objectives as they relate to the cooling canal system and the Uprate Project and those resources that may be affected adjacent to the cooling system. . . . [R]eports will be submitted every six months during the pre Uprate period and initially during the post Uprate period. . . . The potential additional measures that might be required include . . . the development and application of a 3-dimensional coupled surface and groundwater model to further assess impacts of the Uprate Project on ground and surface waters . . . **[and] mitigation measures to offset such impacts of the Uprate Project necessary to comply with State and local water quality standards.**¹⁶

(emphasis added)

The bold portion of the text above is also a quotation from the Conditions of Certification, Section X, Subsection D.2.

The Intervenor is correct in their argument that the costs for O&M and capital have increased for the Monitoring Plan. However, we find that an increase in costs itself is not a change in scope of a project. While OPC/FIPUG assert that the Monitoring Plan is specifically referencing the Turkey Point Uprate Project and does not mention remediation, correction, or corrective action, our Approval Order stated the following:

Because the costs for the TP-CCMP Project are predominantly O&M expenses that will continue for an uncertain duration, and because the water-quality issues the Project is being undertaken to address relate to operation of the Turkey Point **plant as a whole and not just the TP Nuclear Uprate**, FPL should be allowed to recover the costs associated with the TP-CCMP Project through the ECRC.¹⁷

(emphasis added)

¹⁶Order No. PSC-09-0759-FOF-EI, issued November 18, 2009, in Docket No. 090007-EI, *In re: Environmental cost recovery clause*.

¹⁷*Id.* at 13.

Thus, by the Approval Order we considered the concern raised by OPC/FIPUG and addressed the concern directly by providing that the Monitoring Program is inclusive of the plant as a whole. As stated by FPL's Witness Sole, environmental compliance programs evolve based upon information that determines the next appropriate action. The costs FPL is requesting to recover are the result of the anticipated evolution of the original Monitoring Program. The Intervenor's concerns regarding prudence of the Monitoring Plan Disputed Costs are addressed at Section II of this Order.

C. Decision

Based on the record and the Approval Order, the Monitoring Plan Disputed Costs shall be considered part of the existing Monitoring Program. The costs FPL is requesting to recover are the result of the anticipated evolution of the original Monitoring Program.

IV. Allocation of FPL's Disputed Costs between O&M and Capital

A. Parties' Arguments

1. FPL

FPL asserts that its proposed allocation between O&M and capital appropriately identifies the extent to which the RWS will achieve retraction of the hyper-saline plume back to the FPL CCS boundaries (O&M) versus containment of the hyper-saline plume within the FPL CCS boundaries (capital). FPL argues that capitalization will appropriately spread the cost recovery of the asset over the expected life of the asset.

FPL argues that the RWS must be allocated to both capital and O&M because it serves both containment and remediation functions. FPL contends that it used a conservative approach based on Tetra Tech's analysis of the salt mass removal to produce a 74 percent prevention (capital) and 26 percent remediation (O&M) allocation of costs for the RWS project. FPL proposes that its recovery of capital for prevention or mitigation expenses is appropriate and similar to the treatment of emissions control equipment. FPL asserts that a volumetric approach would result in a higher capital percentage. FPL argues that OPC's Witness Panday's suggested approach of revisiting the allocation periodically is inappropriate and not consistent with generally accepted accounting principles (GAAP).

2. OPC/FIPUG

OPC/FIPUG assert that: the costs of the Retraction Well System are remedial in nature and should not be imposed on FPL's customers; FPL's management knew or should have known that its actions in operating the CCS were creating material harm to the Biscayne Aquifer; and, FPL's actions and inaction over time placed the Company in violation of law and, therefore, constitute imprudence. OPC/FIPUG conclude that the costs of addressing the consequences of FPL's imprudence are not properly costs that should be borne by customers.

OPC/FIPUG argue that the consideration of allocation between expense and capital is not appropriate, as it relates to the Monitoring Program. OPC/FIPUG assert that FPL's analysis shows that under the Company's proposed remediation methods, FPL will be unable to complete its remediation efforts within the 10 year period required by the CO. OPC/FIPUG argue that FPL is ignoring the Company's own models with respect to the impacts of the CCS on the deepest portions of the aquifer.

OPC/FIPUG contend that the proposed freshening activities are more effective than the RWS for remediation for the initial ten years of operation. OPC/FIPUG argue that freshening activities eliminate the need for containment except in the deepest layers of the aquifer. OPC/FIPUG contend that the RWS will be ineffective because it will not adequately impact the aquifer's upper or lower layers, and that it is an imprudent activity that should be disallowed. In contrast, OPC/FIPUG assert that FPL's proposed RWS would serve a remediation function for the first ten years of its operation, followed by a potential ten years as a containment function.

OPC/FIPUG argue that compliance with the CO merely resolves FPL's prior DEP NOV; therefore, the containment phase of FPL's remediation project should be considered a separate project from the remediation project, and not recoverable from customers during the first ten years of operation.

3. SACE

SACE asserts that FPL shareholders should not be permitted to benefit from FPL's mistakes and that while FPL argues that its Recovery Well System is preventative, the requirements stemming from the Consent Order and Consent Agreement are not preventative. SACE argues that the term "abatement" as used in the Consent Order means to "minimize" and that the Recovery Well System that is intended to "remediate" will not prevent hyper-salinity in deeper layers from migrating westward. SACE contends that GAAP accounting principles are permissive on allocating costs to capital investment. SACE concludes that recovery of costs should not be allowed because FPL's failure to mitigate the impact of CCS-caused hyper-saline plume before 2014 was imprudent.

SACE argues that we cannot approve cost recovery if a utility is imprudent. SACE alleges that FPL was imprudent in its actions and inactions with regards to the Turkey Point CCS that resulted in the Monitoring Plan Disputed Costs. SACE also asserts that it is inappropriate for FPL to capitalize any of the Monitoring Plan Disputed Costs as activities associated with these costs will fail to prevent or retract the hyper-saline plume in deeper layers of the aquifer.

B. Analysis

The RWS is required by the FDEP CO. FPL is also required by the CO to implement the Nutrient Management Plan and a Thermal Efficiency Plan, and construct an Upper Floridian Aquifer well system to provide freshening water. FPL asserts that all of these functions serve to decrease salinity entering the Biscayne Aquifer from the CCS and result in both remediation and containment. FPL Witness Ferguson testified that the RWS serves both a remediation and preventive function. Based on the record, we find that the RWS and related systems

simultaneously serve both the function of containment of the hyper-saline plume within the boundaries of the CCS and retraction or remediation of the hyper-saline plume outside the boundaries of the CCS. Therefore, costs associated with these functions shall be allocated to both containment and remediation activities. The CO also requires the completion of projects associated with Barge Canal and Turkey Point Canal. FPL has allocated these projects to containment. FPL asserts that all of the costs associated with the Barge Canal Turning Basin Back Fill should be capitalized because that project is preventive in nature.

1. Allocation Percentage

Both FPL's Witness Ferguson and OPC's Witness Panday rely upon a model of salt mass removal developed by Tetra Tech to determine the appropriate cost allocation between capital and O&M. The Tetra Tech model attempts to determine the total mass of salt removed from various layers of the aquifer, and allocates them to remediation or containment based on whether the salt mass originated inside or outside the boundaries of the CCS. The primary difference in analysis between these witnesses is the timeframe used. FPL Witness Ferguson asserts that the appropriate period to consider is 20 years, the expected life of the RWS; this results in a 74 percent containment, and a 26 percent remediation allocation. OPC Witness Panday argues instead for 11 years, when the hyper-saline mass is anticipated to be fully removed; this results in a 65 percent containment, and a 35 percent remediation allocation. FPL argues that the use of 11 years does not acknowledge that the RWS will be operating in a containment function for the remaining nine years of its operational life.

OPC's Witness Panday testified that the allocation between remediation and prevention should be reevaluated on a more regular basis. Witness Panday testified that this is particularly true after the first two years of operating the RWS. For the initial two-year period, Witness Panday proposes an alternative of using the first two years of the Tetra Tech model to allocate 41 percent to containment and 59 percent to remediation. OPC/FIPUG do not support the use of this methodology and instead advocate that all activities should be categorized as either remediation or containment until the end of all remediation activities.

2. Accounting Treatment

Accounting Standards Codification 410-30-25-16 to 18 (ASC 410-30) describes the conditions that must be met in order to capitalize all or a portion of the costs related to environmental contamination treatment. It provides that the costs can be capitalized if "the costs mitigate or prevent environmental contamination that has yet to occur and that otherwise may result from the future operation or activities." FPL Witness Ferguson testified that costs related to mitigation or prevention can be capitalized, and costs related to remediation should be expensed.

OPC's Witness Panday did not testify as to whether the costs should be capitalized or expensed. However, Witness Panday did advocate reevaluating the allocation between expense and capitalization after two years of operation. FPL argued that Witness Panday's proposed treatment is not consistent with GAAP or the Federal Energy Regulatory Commission (FERC) Uniform System of Accounts (USOA) because Witness Panday's approach could change the

historical cost of an asset already placed into service. FERC USOA account 101 A specifically states:

This account shall include the original cost of electric plant, included in accounts 301 to 399, prescribed here-in, owned and used by the utility in its electric utility operations, and having an expectation of life in service of more than one year from date of installation, including such property owned by the utility but held by nominees.

Neither OPC Witness Panday nor any other Intervenor offered any alternative accounting treatment for this project that is consistent with GAAP.

Upon review, we find that the accounting treatment proposed by FPL for the costs associated with the RWS and Barge Canal Turning Basin Back Fill Project is appropriate.

C. Decision

We find that the RWS and related activities perform both remediation and containment functions. Consistent with accounting principles, remediation expenses shall be recovered as O&M, and containment shall be recovered as capital. Based on the record, we find that the Company's proposed allocation of costs are appropriate, and shall be 74 percent containment (capital) and 26 percent remediation (O&M) for the RWS and related activities.

V. Allocation of FPL Disputed Costs to Rate Classes

A. Parties' Arguments

1. FPL

FPL argues that we established the appropriate allocation methodology for the Monitoring Plan by Order No. PSC-09-0759-FOF-EI and that costs associated with the 2015 CA, 2016 CO, and 2016 CAA should be allocated in the same manner as all other environmental cost recovery amounts approved for recovery under the Monitoring Plan project.

2. OPC/FIPUG

OPC/FIPUG did not present arguments regarding this issue.

3. SACE

SACE asserts that: no customer, regardless of class, should have to pay for FPL's mistakes; FPL knew or should have known that the CCS was causing an underground hyper-saline contamination plume spreading from its Turkey Point plant property by 1978, and certainly by 1992 at the latest; and FPL failed to take any action to mitigate the impacts of the CCS on the Biscayne Aquifer (a G-II water source) until 2014. SACE concludes that a prudent

utility manager would have acted promptly and proactively well before 2014 to mitigate and/or remediate the growing hyper-salinity contamination plume outside the CCS boundary. SACE argues that we cannot approve cost recovery if a utility is imprudent and that the Company was imprudent in its actions and inactions regarding the Turkey Point CCS resulting in the Monitoring Plan Disputed Costs.

B. Analysis

By Order No. PSC-09-0759-FOF-EI, we approved the Monitoring Plan and how costs associated with the Monitoring Plan shall be allocated to rate classes. It states:

We approve the following stipulation regarding how the costs associated with the TP-CCMP Project shall be allocated to the rate classes:

Capital costs for the TP-CCMP Project shall be allocated to the rate classes on an average 12 CP demand and 1/13th energy basis. O&M costs shall be allocated on an energy basis.

C. Decision

Upon review, we find that the approved Monitoring Plan Disputed Costs shall be allocated pursuant to Order No. PSC-09-0759-FOF-EI.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that the stipulations and findings set forth in Attachment A and the body of this Order are hereby approved. It is further

ORDERED that each utility that was a party to this docket shall abide by the stipulations and findings herein which are applicable to it. It is further

ORDERED that Florida Power & Light Company shall be allowed to recover through the Environmental Cost Recovery Clause, the Turkey Point Cooling Canal Monitoring Plan costs, if prudently incurred, of complying with the June 20, 2016 Consent Order between FPL and the Florida Department of Environmental Protection, the October 2015 Consent Agreement between FPL and the Miami-Dade County Department of Environmental Resources Management, as amended by the August 15, 2016 Consent Agreement Addendum. It is further

ORDERED that Florida Power & Light Company prudently incurred the 2015 and 2016 Monitoring Plan Disputed Costs, and that the Company's request for 2017 and 2018 Monitoring Plan Disputed Costs are reasonable except that the \$1.5 million escrow deposit component of the Monitoring Plan Disputed Costs is not recoverable under the Environmental Cost Recovery Clause and this disallowance shall be addressed as a "true-up" in the 2018 ECRC proceeding. It is further

ORDERED that we neither approve nor deny a land conveyance from Florida Power & Light Company to SFWMD. It is further

ORDERED that the Florida Power & Light Company's approved costs associated with the CA, CAA, and CO are part of the existing Monitoring Plan project. It is further

ORDERED that Florida Power and Light Company's proposed allocations of costs associated with the CA, CAA, and CO are approved. For the RWS and related activities, the allocations shall be 74 percent containment (capital) and 26 percent remediation (O&M). It is further


ORDERED that Florida Power & Light Company's Monitoring Plan approved costs associated with the CA, CAA, and CO shall be allocated pursuant to Order No. PSC-09-0759-FOF-EI. It is further

ORDERED that the utilities named herein are authorized to collect the environmental cost recovery amounts and use the factors approved herein beginning with the first billing cycle for January 2018 and thereafter through the last billing cycle for December 2018. The first billing cycle may be read before January 1, 2018, and the last cycle may be read after December 31, 2018, so that each customer is billed for twelve months regardless of when the adjustment factor became effective. These charges shall continue in effect until modified by this Commission. It is further

ORDERED that the revised tariffs reflecting the environmental cost recovery amounts and factors determined to be appropriate in this proceeding are hereby approved. Our staff is directed to verify that the revised tariffs are consistent with our decision. It is further

ORDERED that the Environmental Cost Recovery Clause docket is a continuing docket and shall remain open.

By ORDER of the Florida Public Service Commission this 5th day of January, 2018.



CARLOTTA S. STAUFFER
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399
(850) 413-6770
www.floridapsc.com

Copies furnished: A copy of this document is provided to the parties of record at the time of issuance and, if applicable, interested persons.

CWM

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Office of Commission Clerk, and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

ATTACHMENT A APPROVED STIPULATED ISSUES

1. Final Environmental Cost Recovery True-Up Amounts for January 2016 through December 2016

The appropriate final environmental cost recovery true-up amounts for the period January 2016 through December 2016 are as follows:

FPL: \$23,872,381 over-recovery

DEF: \$1,266,492 over-recovery

TECO: \$658,080 under-recovery

GULF: \$3,262,290 under-recovery

2. Estimated/Actual Environmental Cost Recovery True-Up Amounts for January 2017 through December 2017

The appropriate estimated/actual environmental cost recovery true-up amounts for the period January 2017 through December 2017 are as follows:

*FPL: \$28,797,701 over-recovery

DEF: \$1,751,015 over-recovery

TECO: \$6,759,424 over-recovery

GULF: \$11,475,260 over-recovery

* Subject to modification from company-specific issues.

3. Projected Environmental Cost Recovery Amounts for January 2018 through December 2018

The appropriate projected environmental cost recovery amounts for the period January 2018 through December 2018 are as follows:

*FPL: \$212,389,989

DEF: \$62,786,148

TECO: \$72,821,226

GULF: \$211,656,376

* Subject to modification from company-specific issues.

4. Environmental Cost Recovery Amounts, Including True-Up Amounts, for January 2018 through December 2018

The appropriate environmental cost recovery amount, including true-up amounts, for the period January 2018 through December 2018, are as follows:

*FPL: \$159,834,905

DEF: \$59,811,674

TECO: \$66,767,920

GULF: \$203,589,886

* Subject to modification from company-specific issues.

5. Depreciation Rates Used to Develop the Depreciation Expense Included in the Total Environmental Cost Recovery Amounts for January 2018 through December 2018

For the period January 2018 through December 2018, the depreciation rates used to calculate the depreciation expense shall be the rates that are in effect during the period the allowed capital investment is in service.

6. Appropriate Jurisdictional Separation Factors for the Projected Period January 2018 through December 2018

The appropriate jurisdictional separation factors for the projected period January 2018 through December 2018 are as follows:

FPL

Retail Energy Jurisdictional Factor - Base	95.7811%
Retail Energy Jurisdictional Factor - Intermediate	94.2579%
Retail Energy Jurisdictional Factor - Peaking	94.8545%
Retail Demand Jurisdictional Factor - Transmission	88.7974%
Retail Demand Jurisdictional Factor - Base/Solar	95.6652%
Retail Demand Jurisdictional Factor - Intermediate	94.1431%
Retail Demand Jurisdictional Factor - Peaking	94.7386%
Retail Demand Jurisdictional Factor - Distribution	100.0000%

DEF

The Energy separation factor is calculated for each month based on retail kWh sales as a percentage of projected total kWh sales. The remaining separation factors are below and are consistent with the Revised Stipulation and Settlement Agreement approved in Order No. PSC-13-0598-FOF-EI as well as DEF's 2017 Second Revised and Restated Stipulation and Settlement Agreement ("2017 Agreement"), filed on August 29, 2017 in Docket No. 20170183-EI.

Transmission Average 12 CP Demand – 70.203%
Distribution Primary Demand – 99.561%

Production Demand:
Production Base – 92.885%
Production Intermediate – 72.703%
Production Peaking – 95.924%
Production A&G – 93.221%

TECO

Energy: 100.00%
Demand: 100.00%

GULF

The demand jurisdictional separation factor is 97.18277%. Energy jurisdictional separation factors are calculated each month based on retail kWh sales as a percentage of projected total territorial kWh sales.

7. Environmental Cost Recovery Factors for January 2018 through December 2018, by Rate Group

The appropriate environmental cost recovery factors for the period January 2018 through December 2018 for each rate group are as follows:

***FPL**

Rate Class	Environmental Cost Recovery Factor (cents/kWh)
RS1/RTR1	0.159
GS1/GST1	0.150
GSD1/GSDT1/HLFT1	0.136
OS2	0.083
GSLD1/GSLDT1/CS1/CST1/HLFT2	0.131
GSLD2/GSLDT2/CS2/CST2/HLFT3	0.115
GSLD3/GSLDT3/CS3/CST3	0.116
SST1T	0.102
SST1D1/SST1D2/SST1D3	0.126
CILC D/CILC G	0.116
CILC T	0.109
MET	0.128
OL1/SL1/SL1M/PL1	0.030
SL2/SL2M/GSCU1	0.109
Total	0.146

* Subject to modification from company-specific issues.

DEF

Rate Class	ECRC Factors
Residential	0.157 cents/kWh
General Service Non-Demand	
@ Secondary Voltage	0.154 cents/kWh
@ Primary Voltage	0.152 cents/kWh
@ Transmission Voltage	0.151 cents/kWh
General Service 100% Load Factor	0.150 cents/kWh
General Service Demand	
@Secondary Voltage	0.152 cents/kWh
@ Primary Voltage	0.150 cents/kWh
@ Transmission Voltage	0.149 cents/kWh
Curtailable	
@ Secondary Voltage	0.151 cents/kWh
@ Primary Voltage	0.149 cents/kWh
@ Transmission Voltage	0.148 cents/kWh
Interruptible	
@ Secondary Voltage	0.147 cents/kWh
@ Primary Voltage	0.146 cents/kWh
@ Transmission Voltage	0.144 cents/kWh
Lighting	0.146 cents/kWh

TECO

<u>Rate Class</u>	<u>ECRC Factor (¢/kWh)</u>
RS	0.343
GS, CS	0.343
GSD, SBF	
Secondary	0.342
Primary	0.338
Transmission	0.335
IS	
Secondary	0.337
Primary	0.333
Transmission	0.330
LS1	0.339
Average Factor	0.342

GULF

RATE CLASS	ENVIRONMENTAL COST RECOVERY FACTORS ¢/kWh
RS, RSVP, RSTOU	2.124
GS	1.956
GSD, GSDT, GSTOU	1.733
LP, LPT	1.547
PX, PXT, RTP, SBS	1.482
OS-I/II	0.570
OS-III	1.361

8. Effective Date of New Environmental Cost Recovery Factors for Billing Purposes

The new environmental cost recovery factors shall be effective beginning with the first billing cycle for January 2018 and thereafter through the last billing cycle for December 2018. The first billing cycle may be read before January 1, 2018, and the last cycle may be read after December 31, 2018, so that each customer is billed for twelve months regardless of when the adjustment factor became effective. These charges shall continue in effect until modified by this Commission.

9. Approval of Revised Tariffs Reflecting the Environmental Cost Recovery Amounts and Environmental Cost Recovery Factors Determined to be Appropriate in this Proceeding

The Commission hereby approves revised tariffs reflecting the environmental cost recovery amounts and factors determined to be appropriate in this proceeding. The Commission staff is directed to verify that the revised tariffs are consistent with the Commission's decision.

10F. Temporary Manatee Heating System for the Fort Lauderdale Plant ("PFL") Site as part of FPL's Existing Manatee Temporary Heating System ("MTHS") Project

The modification to include a manatee temporary heating system for the PFL is hereby approved. Costs for the PFL manatee temporary heating system will be allocated to rate classes in the same manner as all existing costs for the MTHS project.

10G. Effects on the 2018 Environmental Cost Recovery Factors of the St. Johns River Power Park Transaction (SJRPP), Approved by the Commission on September 25, 2017

The net impact of the SJRPP Transaction will be a reduction in the environmental cost recovery factors for 2018. At this point, FPL cannot prepare and file an updated filing reflecting the SJRPP Transaction in time for parties to have a reasonable opportunity to review it before the hearing scheduled in this docket on October 25-27, 2017. Therefore, FPL will file a mid-course correction limited to the impacts of the SJRPP Transaction by no later than November 17, 2017, to allow ample time for Commission staff and parties to review and conduct discovery, if any, before the mid-course correction is brought to the Commission for decision at the February 6, 2018 Agenda Conference, with the intent that the revised environmental cost recovery factors go into effect on March 1, 2018.

11. Revenues Included in Tampa Electric's Projected ECRC Cost Recovery Amount for 2018 Associated with Phase II of the Company's Coal Combustion Residuals Compliance Program ("CCR Program")

Approval of the projected revenues for the costs associated with the Phase II of the CCR program is conditioned on this Commission's approval of the CCR program in Docket No. 20170168-EI. To the extent the scope of the CCR program costs differ from costs of the approved program in Docket No. 20170168-EI, the revenues collected for the CCR program in Docket No. 20170007-EI shall be subject to true-up.

12A. DEF's 316(b) Compliance Plan

DEF's 316(b) Compliance Plan is reasonable as it meets the criteria for recovery through the Environmental Cost Recovery Clause. Recovery of related costs through the ECRC is approved.

12B. Allocation of Costs Associated with DEF's 316(b) Compliance Plan

Costs associated with DEF's 316(b) Compliance Plan shall be allocated to the rate classes on a demand basis.

12C. Regulatory Asset Treatment of the Alderman Road Fence

The Commission approves DEF's proposed treatment for the Alderman Road Fence - Project 3.1(a).

13. Docket to Remain Open

While a separate docket number is assigned each year for administrative convenience, this is a continuing docket and shall remain open.

ATTACHMENT B ACRONYM LIST FOR CONTESTED ISSUES

AO	Administrative Order
Approval Order	Commission Order No. PSC-09-0759-FOF-EI
CA	Consent Agreement
CAA	Consent Agreement Addendum
CCS	Cooling Canal System
CO	Consent Order
COC	Conditions of Certification
DERM	Miami-Dade Department of Environmental Resources Management
ECRC	Environmental Cost Recovery Clause
EPA	Environmental Protection Agency
FDEP	Florida Department of Environmental Protection
FEA	Federal Executive Agencies
FERC	Federal Energy Regulatory Commission
FIPUG	Florida Industrial Power Users Group
FPL	Florida Power and Light
F.S.	Florida Statutes
GAAP	Generally Accepted Accounting Principles
GULF	Gulf Power Company
NOV	Notice of Violation
O&M	Operation and Maintenance
OPC	Office of Public Counsel
PSU	Practical Salinity Units
RFRP	Retraction and Freshening Remediation Project
RWS	Recovery Well System
SACE	Southern Alliance for Clean Energy
SFWMD	South Florida Water Management District
TP	Turkey Point
TP-CCMP or Monitoring Plan	Turkey Point Cooling Canal Monitoring Plan
USOA	Uniform System of Accounts

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET: 20170007-EI EXHIBIT: 3
PARTY: FLORIDA POWER & LIGHT
COMPANY(Direct)
DESCRIPTION: Michael W. Sole MWS-2

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF FLORIDA

Civil Action No. 70-328-CA

UNITED STATES OF AMERICA, :
 :
 Plaintiff, :
 :
 v. : FINAL JUDGMENT
 :
 FLORIDA POWER AND LIGHT COMPANY, :
 :
 Defendant. :

WHEREAS the plaintiff, the United States of America, has filed a complaint and an amended complaint in the above-captioned matter, and the defendant, the Florida Power and Light Company, has appeared and denied the allegations of the complaint, and has filed affirmative defenses and a counterclaim and the plaintiff and the defendant, by their respective attorneys, have each consented to the making and entry of this Final Judgment without further pleading or trial or adjudication of or finding on any issues of fact or law raised by the complaint,

NOW, THEREFORE, without trial or adjudication of any issue of fact or law herein, and without this Final Judgment constituting evidence or an admission by any party with respect to any such issue in the pending action or in any other proceeding, and, upon consent of the parties as aforesaid, it is hereby

ORDERED, ADJUDGED, AND DECREED as follows:

I

This Court has jurisdiction of the subject matter of this action and of the parties thereto.

II

For the purposes of this Final Judgment:
Appendix 000036

(a) "Florida Power and Light" shall mean the defendant

- 2 -

(b) "Generating facilities" shall mean Florida Power and Light's fossil fueled electric generating units 1 and 2, and nuclear powered electric generating units 3 and 4, all of which are located (or are under construction) at Turkey Point near Homestead, Florida.

(c) "Intake structures" shall mean all natural or artificial channels, structures, or devices through which Florida Power and Light draws or is able to draw water from Biscayne Bay or Card Sound for use in cooling its generating facilities.

(d) "Cooling system" shall mean any and all waterways, lakes, ponds, canals, dikes, levees, dams, barriers, or other structures, devices, or appurtenant facilities which under the provisions of this Judgment shall be constructed and employed to reduce the temperature of water discharged from Florida Power and Light's generating facilities.

(e) "Discharge canals" shall mean all natural or artificial conduits through which water from Florida Power and Light's generating facilities is discharged to Biscayne Bay or Card Sound.

(f) "A regional emergency" shall mean one of the following occurrences within the State of Florida: (1) a catastrophic natural disaster including hurricanes, floods, and tidal waves; or (2) other emergencies declared by state, county, municipal, or federal authorities during which an uninterrupted supply of electric power is vital to public health and safety.

(g) "National power emergency" shall mean any event causing authorized federal officials to require or

- 3 -

request that Florida Power and Light supply electricity to points within or without the State of Florida.

(h) "Reactor emergency" shall mean an unanticipated equipment malfunction necessitating prompt remedial action to avoid endangering the public health or welfare.

(i) Abbreviations are as follows: (1) cfs = cubic feet per second; (2) °F = degrees fahrenheit; (3) fps = feet per second.

(j) Temperature, salinity, flow rate, and velocity measurements provided herein shall be instantaneous measurements and shall not be average figures.

(k) "Salinity" shall mean the total mass of dissolved solids in a one liter sample of water, referred to the temperature of the receiving water.

III

The provisions of this Final Judgment shall be binding upon Florida Power and Light, its directors, officers, agents, servants, employees, successors and assigns, and all persons, firms, and corporations acting under, through, or for it, and all persons, firms, and corporations in active concert or privity with it, providing they have actual notice of the Final Judgment by personal service or otherwise.

IV

Subject to the provisions of Paragraph VI, and commencing four years after the receipt by Florida Power and Light of all necessary construction permits, and upon receipt of the cooling system operating permits, but in no event later than five years from the date of the entry of this Final Judgment, Florida Power and Light shall not discharge into Biscayne Bay or Card Sound any water used for cooling

-4-

except in accordance with the provisions of Paragraph V of this Final Judgment. With respect to those same generating facilities, immediately subsequent to the entry of this Final Judgment, Florida Power and Light:

1. Shall, upon securing the necessary State and Federal permits, complete the construction of the Card Sound Canal within four years;
2. Shall continue to prosecute its application to the Corps of Engineers for a dredging permit for the Card Sound Canal, and immediately upon entry of this Final Judgment, the Corps of Engineers will commence to process Florida Power and Light's application for a permit pursuant to the regulations of the Corps of Engineers;
3. Shall not, prior to the completion of the Card Sound Canal, discharge water into Biscayne Bay at a rate in excess of 3000 cfs;
4. After completion of the Card Sound Canal and until October 1, 1973, shall not discharge water at an average 24 hour rate in excess of 2750 cfs into Card Sound and 1500 cfs into Biscayne Bay; thereafter Florida Power and Light shall not discharge water at an average 24 hour rate in excess of 2150 cfs into Card Sound and 2100 cfs into Biscayne Bay;
5. Shall not at any time discharge water into Biscayne Bay or Card Sound at a temperature in excess of 95°F;
6. Shall construct and maintain the outlet into Card Sound so that:

A. No discharge will be allowed to flow over the shallow substrate which is exposed at low tide (retaining structures
Appendix - 000039
or berms extending to the 8 foot bathymetric contour of Card Sound

- 5 -

B. The discharge will be directed upward so that a warm water plume will form on top of the water; and

C. The rate of discharge will be controlled so that water will not enter Card Sound at a velocity greater than 1.5 fps;

7. Shall construct no later than July 1, 1972, and thereafter maintain, a ground water monitoring system southward and eastward of the cooling system for the purpose of evaluating the effect of the seepage from the cooling system upon the underlying aquifer. The monitoring system shall consist of a series of observation wells, the number and location of which shall be mutually agreed upon between Florida Power and Light Company and the Environmental Protection Agency, but which will not exceed 23 wells drilled to a depth of not more than 70 feet. From July 1, 1972 to July 1, 1976, transmissivity will be evaluated in each well every three months, while temperature, concentration of biocides, and salinity will be measured in each well each month. Monitored data will be submitted to the Environmental Protection Agency within ten days following collection. Monitoring frequency requirements to be maintained after July 1, 1976, will be determined by the Environmental Protection Agency based on evaluation of the data in consultation with the United States Geological Survey. If in the judgment of the Environmental Protection Agency the monitored data reveals that substantial environmental harm is occurring, Florida Power and Light shall take such necessary remedial action as the Environmental Protection Agency may direct;

8. Shall install and maintain such protective devices at the intake structure and discharge canal as may be required by the Florida Department of Natural Resources in accordance with a reasonable construction schedule;

-6-

9. Shall not introduce biocides into the waters used to cool the condensers at its generating facility except in compliance with the specifications set out in Chapters 17-3 and 17-4 Florida Administrative Code and the applicable laws and regulations of the State of Florida;

10. Shall, consistent with good system maintenance and operating practices providing for necessary area protection, operating reserves, and over-all system reliability, provide power to the areas it serves in the State of Florida by drawing upon all sources of power available to it in such combinations as to minimize the discharges of heated water from the Turkey Point plant;

11. Shall immediately arrange with appropriate officials of the United States, the State of Florida, and other appropriate jurisdictions, to commence joint studies of: (a) the availability of groundwater from at least the depth of the Floridan aquifer (this joint study shall be completed within two years after the entry of this Final Judgment); (b) alternate sources of cooling water, particularly from nearby canals such as the Florida City Canal, the Mowry Canal, and the North Canal; (c) mechanical cooling devices such as powered spray modules and other reasonable concepts for reducing adverse environmental effects attributable to the cooling system specified in this Final Judgment; and (d) procedures for restoration of areas affected by discharges from the Turkey Point generating facilities. Florida Power and Light's financial contribution to these studies shall be limited to \$500,000. The studies specified in (a), (b) and (c) above shall be directed toward the determination of the feasibility, practicability, and acceptability of utilization of such alternate sources of water as a substitute or supplement for withdrawals of make-up water from Card Sound for the cooling system described in Paragraph

Appendix - 000041

-7-

12. Shall utilize those waters which, as a result of the studies referred to in subparagraph 11 above, the Administrator of the Environmental Protection Agency may identify as being available to provide make-up water for Florida Power and Light's cooling system, to the extent that this can be done feasibly and practicably and at a cost which is not disproportionate to the degree of environmental protection to be achieved and to the extent that the same can be done without violating any lawful local, state, or federal rule, regulation, statute, ordinance, or order. The Administrator shall not identify groundwater as available for use without the written concurrence of the State of Florida or local agencies with jurisdiction recognized by federal or state law. Florida Power and Light shall alter its Card Sound discharge and withdrawal flow regimen based on the less saline water inputs, as directed by the Administrator, so as to achieve the least amount of environmental damage, but at no power production penalty;

13. Immediately proceed to acquire land for the construction, operation, and maintenance of a cooling system to reduce the temperature of the water discharged from the Turkey Point generating facilities consistent with the standards for operation required by this Final Judgment, and further shall commence to construct, immediately upon receipt of all necessary construction permits, the structures necessary to comply with Paragraph V of this Final Judgment, and shall submit quarterly progress reports concerning the construction of such cooling system in the four years following receipt of the necessary permits and, no later than April 1 of the fourth year after the date of the entry of this Final Judgment, a report specifying the results of trial operation and testing of the final cooling system; and

- 8 -

14. Shall install and operate monitoring devices at the outlet to Card Sound and at other locations, all of the foregoing to be specified by the Environmental Protection Agency, to measure temperature, salinity, flow rate, and velocity.

V

Except as otherwise provided by Paragraph IV of this Final Judgment, all water used by Florida Power and Light to cool its condensers at its generating facilities at Turkey Point shall be discharged into a cooling system, and no water shall be discharged from this cooling system into Biscayne Bay, or Card Sound, or any other navigable water of the United States or tributary thereof unless required to prevent the excessive concentration of salt in the waters of the cooling system, in which case discharges shall be made only into Card Sound and only under the following conditions:

1. Discharges to and withdrawals from Card Sound shall be made only through the Card Sound Canal;
2. The temperature of the water which is discharged as measured at the control structure (to be constructed at a point approximately one mile north of the outlet of Card Sound Canal) shall not exceed 90° F;
3. Subject to subparagraph 2 of Paragraph V, the temperature of the water which is discharged, as measured at the control structure, shall not be more than 4° F above the ambient temperature of the waters of Card Sound as measured at a station or stations to be designated by the Environmental Protection Agency;
4. Variations in the temperature of the water which is discharged shall not exceed 2° F per hour during times when the temperature is rising, or 1.0° F per hour during times when the temperature is falling;
5. The salinity of the water which is discharged, as measured at the outlet to Card Sound, may not be greater than 1.10 times the salinity of Card Sound and may not exceed 44 parts per thousand;

- 9 -

6. The flow as measured at the control structure shall not exceed 1200 cfs;

7. Discharges and withdrawals shall be limited to a tidal regimen (which approximates a six hour period), except in the event that salinity in the cooling system approaches 1.10 times the salinity of the water of Card Sound, or 44 parts per thousand, whichever is more limiting and an additional time period for discharge is required to avoid exceeding those limits;

8. All man-made canals connecting the intake structures and the cooling system with Biscayne Bay shall be closed;

9. Final operating requirements shall include the interim operating requirements contained in subparagraphs 6, 7, 8, 9, 12 and 14, of Paragraph IV; and

10. Florida Power and Light shall develop and submit to the Environmental Protection Agency within two years from entry of this Final Judgment, a contingency plan for rapid restoration of the cooling facilities in the event of system damage due to storms, hurricanes, and similar extraordinary acts of nature.

VI

During a national power emergency, regional emergency, reactor emergency, or at any time when the health, safety, or welfare of the public may be endangered by the inability of Florida Power and Light to supply electricity from any other sources available to it, the operating limits provided in this Final Judgment shall be inapplicable. However, during such emergencies, the defendant shall not exceed the operating limits except as is necessitated by the emergency. Provided Florida Power and Light shall have made timely and proper application for all necessary licenses, permits, consents, approvals, and certifications required by law for construction or operation of the cooling system and discharge canal required to meet the standards provided for herein and shall have duly prosecuted such applications, this Court - 000044 - intend the time within which Florida Power and Light is required to do any act herein by the

- 10 -

length of any delay in completion of construction or operation of the cooling system which is shown to have been the exclusive result of physical impossibility, force majeure, or legal prohibition.

VII

In the event Florida Power and Light shall be in substantial violation of the express operating provisions of the cooling system herein, the United States shall give Florida Power and Light written notice describing said violations by certified mail to Florida Power and Light, 4200 West Flagler Street, Miami, Florida 33134, and if at the expiration of 3 days after the giving of said notice, said violation upon which said notice was based shall continue to exist, the United States may apply to this Court for an order requiring Florida Power and Light to perform such obligations and comply with such limitations as are expressly required herein and shall accompany such application with a showing of said violation notice, and noncompliance. The relief which may be granted upon a showing of noncompliance with the operating limitations contained herein shall include but not be limited to an order requiring Florida Power and Light to limit operation of its generating facilities to the extent necessary to achieve compliance with this Final Judgment.

VIII

This Final Judgment is not and shall not be interpreted to be a permit under 33 U.S.C. §§403, or 407 nor shall it in any way affect Florida Power and Light's obligation, if any, to secure a license or permit from the Corps of Engineers or the Atomic Energy Commission pursuant to 33 U.S.C. §§403, or 407, 33 U.S.C. §§1151 et seq., 42 U.S.C. §2134, and 42 U.S.C. §4321, nor shall it be interpreted to affect or waive any of the conditions or requirements which may be validly imposed by the Corps of Engineers or the Atomic Energy Commission as

-11-

of the Interior and the Environmental Protection Agency have reviewed and participated in technical studies which have been used to establish the standards for operation of the generating facilities and the cooling system hereinabove set forth, and the Department of the Interior and the Environmental Protection Agency shall recommend to the Corps of Engineers and the Atomic Energy Commission that the necessary permits and/or licenses be issued for the construction and operation of generating facilities, a cooling system, discharge canals, and any structures or work in navigable waters of the United States or for discharges into such waters or tributaries thereof, consistent with the standards for operation set forth in this Final Judgment and with the standards of the Atomic Energy Commission. Also, this Final Judgment does not operate to excuse Florida Power and Light from compliance, as required by law, with any Federal or State water quality requirements now or hereafter applicable to it.

IX

For the purpose of insuring compliance with this Final Judgment, duly authorized representatives of the Department of Justice, the Environmental Protection Agency, the Department of the Interior, the Atomic Energy Commission, and the Corps of Engineers shall be permitted access, at reasonable times, to Florida Power and Light's facilities at Turkey Point for the purpose of: (1) inspecting the cooling facilities, intake structure, discharge canal(s), and monitoring devices; (2) collecting water samples therefrom; (3) conducting testing procedures which are not unduly disruptive of the operation of such facilities; (4) obtaining from Florida Power and Light records of operations and other corporate records pertaining to the construction, operation and maintenance of its cooling system, intake

-12-

facilities and discharge canals and information concerning the distribution of electric power within the State of Florida. Information concerning the impact of the cooling system on the environment may be freely disclosed. Other information obtained under the provisions of this Paragraph will be divulged by the representatives designated thereunder to any person other than a duly authorized representative of the Department of Justice, Environmental Protection Agency, Department of the Interior, Atomic Energy Commission, or Corps of Engineers only as is provided by federal law or in the course of legal proceedings to which the United States is a party for the purpose of securing compliance with this Final Judgment.

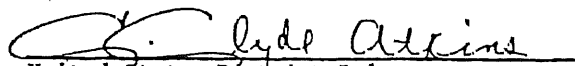
X

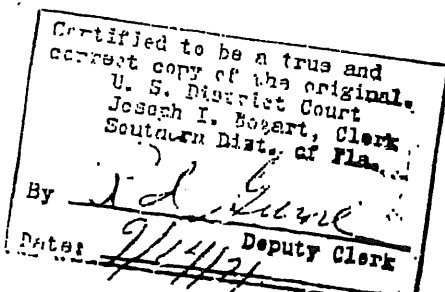
Florida Power and Light agrees that it will dismiss its counter-claim in this action against the plaintiff, United States of America.

XI

Jurisdiction is retained for the purpose of enabling either party to this Final Judgment to apply to this Court at any time for such further orders and directions as may be necessary or appropriate for the construction or carrying out of this Final Judgment, or the modification or termination of any of the provisions thereof or for the enforcement or compliance therewith. In addition copies of all reports, plans and studies required to be prepared by the terms of this Final Judgment shall be promptly filed with this Court. If Florida Power and Light utilizes the provisions of the first sentence of Paragraph VI, then it shall immediately report to this Court and to the Administrator of the Environmental Protection Agency the fact of the emergency and the reasons for utilization of such provisions.

Dated: Miami, Florida
September 10th, 1971


United States District Judge



Appendix - 000047

- 13 -

We hereby consent to the entry of the foregoing Final
Judgment without further notice.

THE UNITED STATES OF AMERICA, Plaintiff

BY:

Shiro Kashiwa By JAG
SHIRO KASHIWA
Assistant Attorney General
Department of Justice

Walter Kiechel, Jr. By JAG
WALTER KIECHEL, JR.
Deputy Assistant Attorney General
Department of Justice

Robert W. Rust
ROBERT W. RUST
United States Attorney
Miami, Florida 33132

Martin Green
MARTIN GREEN
Attorney
Department of Justice

James A. Glasgow
JAMES A. GLASGOW
Attorney
Department of Justice
Washington, D. C. 20530

FLORIDA POWER AND LIGHT COMPANY, Defendant

BY:

Robert J. Gardner
ROBERT J. GARDNER
Vice President

MCCARTHY STEEL HECTOR & DAVIS
Attorneys for Defendant

BY: William C. Steel
WILLIAM C. STEEL
Attorney

Appendix 00048 Florida 33131

(Composite)

1. FPL's Response to OPC's 3rd Production of Documents Nos. 6, 8
(No. 8 and additional files contained on Staff Hearing Exhibits CD)
2. FPL's Response to OPC's 3rd set of Interrogatories, No. 40
3. FPL's Response to Staff's 1st Production of Documents No. 14
(Additional files contained on Staff Hearing Exhibits CD for No. 14)
4. FPL's Response to the OPC's 3rd Production of Documents, No. 40
(Additional files contained on Staff Hearing Exhibits CD for No. 40)
5. FPL's Response to the OPC's 3rd Production of Documents, No. 32
(No. 32 and additional files contained on Staff Hearing Exhibits CD)
6. FPL's Responses to OPC's 3rd Interrogatories, Nos. 32, 33, 39, 41, 43
7. FPL's Responses to OPC's 4th Interrogatories, No. 68
8. FPL's Responses to OPC's 3rd Request for Production Nos. 8, 44, 46, 48
(Nos. 8, 44, 46, 48 and additional files contained on Staff Hearing Exhibits CD)
9. FPL Response to OPC's 3rd Interrogatory. 42 (Revised) and the Supplemental response to 3rd
Production of Documents, No. 47
(No. 47 and additional files contained on Staff Hearing Exhibits CD)
10. FPL Response to OPC's 3rd Interrogatory, No. 38
11. FPL Response to OPC's 3rd Production of Documents, No. 43
(No. 43 and additional files contained on Staff Hearing Exhibits CD)
12. Substituted Uncorrupted Article in response to OPC's 3rd Production of Documents, No. 40

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET: 20170007-EI EXHIBIT: 66
PARTY: STAFF(Direct)
DESCRIPTION: Michael W. Sole Michael W. Sole Michael
W. Sole Michael W. Sole Peter AndersenMichael W.

**Florida Power & Light Company
Docket No. 170007-EI
OPC's Third Request for Production
Request No. 6
Page 1 of 1**

Q. Please provide a copy of the report (and supporting workpapers and documentation) regarding Salinity Evaluation by Dames & Moore for FPL, dated on or about January 5, 1978.

A. Documents responsive to this request are provided as Bates Nos. ECRC-17-000037 through ECRC-17-000169.

Q.

Please identify all modeling reports prepared by you or on your behalf regarding groundwater flow and transport in and around the TPCCS.

A.

Please see response to OPC's 3rd Set of Interrogatories, No.33.

DECLARATION

I sponsored the answers to Interrogatory Nos. 33 through 65 from **OPC'S THIRD SET OF INTERROGATORIES (NOS. 33-65)** to Florida Power & Light Company in Docket No. 160007-El. and that the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.



Steven Scroggs

Date: 1/20/2017

QUESTION:

Please provide a copy of each document referencing FPL's awareness of the existence of a hypersaline plume extending beyond the Turkey Point property.

RESPONSE:

Per discussion with FPSC Staff, FPL is producing reports and other communications between FPL and regulatory agencies or other outside parties. Please see the attached. Please also see documents provided in response to Staff's First Request for Production of Documents Nos. 5 and 20.

Florida Power & Light Company
Docket No. 170007-EI
OPC's Third Request for Production
Request No. 40
Page 1 of 1

Q.

Please provide copies of the final studies and analysis that FPL is required to submit as part of the 2016 Notice of Violation.

A.

This information is available electronically (ECRC-17-008623). Please contact David Lee at 561-691-7263 or Jack Leon at 305-442-5930 for access instructions.

Q.

Please refer to FPL's response to OPC Interrogatory No. 14 for the next series of Interrogatories.

In the first paragraph it states "Subsequently the ability to control salinity via such discharges was removed from the operating permits."

- a. When was such control over discharges removed from the operating permits?
- b. Please identify who initiated this change in operating permits arise (i.e. - FPL, permitting authorities, etc.) and explain why this change was made?
- c. Who were the permitting authorities responsible for approving this change to the operating permits?
- d. Did the Nuclear Regulatory Commission (NRC) approve that change to the operating permits?
- e. Please identify any studies that were performed related to approving this change to the operating permits?
- f. Did any of the studies performed in support of approving this change to the operating permits analyze whether a possible hypersaline water plume or saltwater plume could result, if so, please explain?
- g. Did any of the studies performed in support of approving this change to the operating permits predict whether a possible hypersaline water plume or saltwater plume could result, if so, please explain?
- h. Did any experts involved in this change in operating permits identify that a hypersaline water plume or saltwater plume could result? If so, please identify the person(s), when they notified FPL or the permitting authorities, and any documents they provided to FPL.

A.

- a. On or around November 15, 1978
- b. The amendment to the Facility Operating License Nos. DPR-31 and DPR-41 was made by the NRC in response to letters from FPL proposing changes to the Environmental Technical Specifications contained in the licenses. One of two original exceptions upon which FPL could discharge water from the cooling canal system into Card Sound or Biscayne Bay was if "required to prevent the excessive concentration of salt in the waters of the cooling system." Records regarding the considerations leading up to the permit modification are limited; however, discussion contained in the Environmental Impact Appraisal (EIA) supporting the NRC license amendments suggests that factors influencing the decision were based on the finding that salinity levels in the cooling canal system were stable and that periodic blowdown of hypersaline water to the Bay would not be needed. This concept was summarized in the EIA as follows; "During the more

than five years that the cooling canal system has been operating in the close-cycle mode, the salinity levels inside the cooling canal system have consistently remained within 2 or 3 parts per thousand of the salinity of Biscayne Bay”.

- c. The Nuclear Regulatory Commission.
- d. Yes.
- e. As discussed in b. above, records regarding studies and considerations related to the operating permit change are limited. However, cooling canal salinity data contained in Discharge Monitoring Reports during the 1970s required by the NPDES permit support the findings that canal salinity was stable and similar to the Bay salinities during the 1970s.
- f. Based on Discharge Monitoring Reports from the 1970s, there were no data indications that hypersaline water was occurring in the canals in the time period from the inception of the cooling canal system through the time when the license amendments were made in 1978. Quarterly groundwater monitoring reports prepared by Dames and Moore in the 1970s also show no significant increases in groundwater salinities beyond initial ambient seasonal variations suggesting there was no expectation that a hypersaline condition would develop.
- g. Duplicate; see f. above
- h. FPL contracted with the consulting firm Dames and Moore (Porter Knowles, President) to conduct groundwater monitoring and prepare quarterly reports analyzing the groundwater data for submittal to the Southern and Central Flood Control District during the 1970s and 1980s. The conclusion of these reports leading up to the NRC license amendments of 1978 was that there were no significant increases in groundwater salinities beyond ambient seasonal variations observed.

Q.

Please identify any and all studies that have been conducted by or on behalf of FPL to determine the impact of the TPCCS on groundwater salinity.

A.

Please see the following responsive documents contained in OPC's Third Set of Production of Document's, No. 45.

- Cross-Sectional Model of Turkey Point Cooling Canal System (CCS); Peter F. Andersen and James L. Ross, Tetra Tech: February 14, 2014
- FPL-27-PFA-09 Figs. RE Salinity Profile at CCS Extent (Composite).pdf (July 2015) – Hearing exhibit showing cross-sectional model simulated salinity at westernmost extent of CCS under “No Action” and “Salinity Reduction” alternatives.
- FPL-22-PFA-04 Fig. RE Effects of Addition of Lower Salinity Water (Composite).pdf (July 2015) - Hearing exhibit showing cross-sectional model simulated salinity in Biscayne Aquifer under “No Action” and “Salinity Reduction” alternatives
- Salt Water Orientation in the Biscayne Aquifer in the Turkey Point Plant Vicinity Prior to Installation of the CCS (3 baseline salinity files); Golder Associates Inc.: August 16, 2011
- FPL Turkey Point Semi-Annual Monitoring Report for Units 3 & 4 Uprate Project - February 2011
- FPL Turkey Point Annual Monitoring Report for Units 3 & 4 Uprate Project - August 2011
- FPL Turkey Point Comprehensive Pre-Uprate Monitoring Report for Units 3 & 4 Uprate Project: October, 2012
- FPL Turkey Point Annual Post-Uprate Monitoring Report for Units 3 & 4 Uprate Project: August 2014
- FPL Turkey Point Annual Post-Uprate Monitoring Report (Addendum) for Units 3 & 4 Uprate Project – May 2015
- FPL Turkey Point Comprehensive Post-Uprate Monitoring Report for Units 3 & 4 Uprate Project: March, 2016
- Feasibility Study to Assess Engineering Options for Stopping Westward Migration of Saline Water and Decreasing CCS Concentrations, Turkey Point Plant, Florida; GeoTrans, Inc.: August 11, 2010
- Continuous Surface Electromagnetic Mapping of Hypersaline Water West and North of the Turkey Point CCS; Enercon Services, Inc.: May, 2016

Please also see responsive records attached to OPC's Third Set of Interrogatories, No. 34.

Q.

Please state all measures FPL has taken since the year 1980 to alleviate salinity in the TPCCS, and identify and describe all analyses that have been conducted towards evaluating the impact of those measures.

A.

Since 1980 has performed various measures to reduce salinity in the TPCCS. These include:

- Canal sediment dredging campaigns
- Vegetation removal from the berms
- Flow balancing within the CCS
- Addition of water from marine wells
- Addition of excess stormwater from L-31
- Addition of water from the UFA

Please see the response to OPC's 3rd Set of Interrogatories No.35 and 38.

Q.

Please identify and describe all analyses that have been conducted by or on behalf of FPL to evaluate saltwater migration in the Biscayne Aquifer and the impact of hypersaline water from the TPCCS.

A.

Please see response to OPC's 3rd Set of Interrogatories, No.33.

Q.

Please identify and describe all analyses that have been conducted by or on behalf of FPL to evaluate the success of saltwater migration abatement measures at TPCCS.

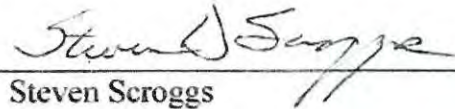
A.

Projects with an objective of saltwater migration abatement are in the design, contracting and permitting phases. Because these projects have not been implemented, no evaluation of success has been conducted.

DECLARATION

I sponsored the answers to Interrogatory Nos. 33 through 65 from **OPC'S THIRD SET OF INTERROGATORIES (NOS. 33-65)** to Florida Power & Light Company in Docket No. 160007-EI, and that the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.



Steven Scroggs

Date: 1/20/2017

QUESTION:

Please identify all studies, analyses or reports conducted by you or on your behalf that were intended to, or did, identify the contribution made by your operations to the growth in size and/or directional expansion of the saline plume.

RESPONSE:

For purposes of responding to this question FPL is assuming “saline plume” means waters consisting of a salinity between fresh water (defined by the U.S. Geological Survey as less than 1,000 ppm of dissolved salts) and hypersaline water (defined by paragraph 8 of the October 2015 Consent Order as 19,000 mg/L chlorides), also referred to as the “saltwater interface.”

While it is evident that water from the cooling canals has traveled outward beyond the boundaries of the CCS, there have been no studies, analyses or reports conducted by or on FPL’s behalf that determined FPL’s contribution to the growth in size or expansion of the saltwater interface. Paragraph 23a of the June 2016 CO requires FPL to conduct comprehensive three-dimensional modeling seeking to identify the contribution of all factors influencing the saltwater interface.

DECLARATION

I sponsored the answers to Interrogatory Nos. 66-68 from OPC's Fourth Set of Interrogatories to Florida Power & Light Company in Docket No. 170007-EI, and that the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.



Signature

Michael Sole

Name [Print or Type Name]

Date: 4/18/2017

Q.

Please identify and describe all analyses that have been conducted by other entities to your knowledge to evaluate saltwater migration in the Biscayne Aquifer and the impact of hypersaline water from the TPCCS.

A.

- *"Groundwater Data Review, Florida Power & Light 2012 Pre-Uprate Report"*, SFWMD, September 2013
This report was prepared by the South Florida Water Management based on their independent review of the data reported in the FPL 2012 Comprehensive Pre-Uprate Monitoring Report as it related to CCS salinity impacts to groundwater
- *"Effect of hypersaline cooling canals on aquifer salinization"*, Hughes, J.D., C.D. Langevin, L. Brakefield-Goswami, 2009; Hydrogeology Journal,
This journal article describes a two dimensional SEAWAT density dependent heat and solute transport modeling assessment of hypersaline CCS water migration in groundwater.
- *"The Cooling Canal System at the FPL Turkey Point Power Station"*, David Chin, UM, May, 2016; Report to County Commissioners
This report was an independent assessment of FPL monitoring data conducted under contract by the MDC Department of Environmental Resources for presentation to the County Commissioners
- *"South Miami Dade Saltwater Intrusion 5th Supplement"*, presentation to SFWMD, April 15, 2015
Slide presentation by Atlantic Civil Inc., to SFWMD describing their interpretation of FPL data, reports by others and modeling conducted by their consultants regarding occurrence and movement of saline/hypersaline groundwater from the CCS
- *"Simulation of Groundwater Flow and Saltwater Movement in the Vicinity of the Atlantic Civil Property South Miami-Dade County, Fl."* Earthfx Inc, January 30, 2012
This report describes solute transport groundwater modeling conducted by consultants to Atlantic Civil Inc. to evaluate location and movement of saline groundwater and linkage to the FPL Cooling Canals conducted in support of mining permits and litigation.

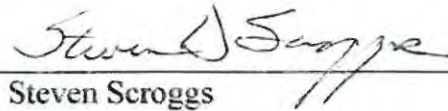
EarthFx Inc. conducted a modeling exercise in support of litigation by Atlantic Civil. The model was discussed in the PPSA Site License modification DOAH hearing in 2015 and the following are exhibits from the EarthFx modeling presented in the hearing.
 - EarthFx Model Simulations—1997-2010 Video
 - EarthFxModel Simulations—2001-2015 Video
 - EarthFx Model Simulations—H1 Salinity Reduction Graphic

- EarthFx Model Simulations—H2 Salinity Reduction Graphic
- EarthFx Model Simulations—H3 Salinity Reduction Graphic
- EarthFx Model Simulations—H4 Salinity Reduction Graphic
- EarthFx Model Simulations—H5 Salinity Reduction Graphic
- EarthFx Model Simulations—No Action Video
- EarthFx Model Simulations—No Change Salinity Reduction and Salinity Reduction without Head Increase at 10 years Graphic
- EarthFx Model Simulations—Salinity Reduction vs No Action at 10 Years Graphic
- EarthFx Model Simulations—Salinity Reduction vs Salinity Reduction with Pumping near L31E and ACI at 10 Years Graphic
- EarthFx Model Simulations—Salinity Reduction versus Salinity Reduction with Pumping near L31E at 10 Years Graphic
- EarthFx Model Simulations—Salinity Reduction versus Salinity Reduction without Head Increase at 10 Years Graphic
- EarthFx Model Simulations—Salinity Reduction with Pumping near L31 vs Pumping near L31 and ACI at 10 Years Graphic
- EarthFx Model Simulations—Salinity Reduction with Wells 96 120 video
- EarthFx Model Simulations—Salinity Reduction Video
- EarthFx Model Simulations—Salinity Dissolved Solids Concentration in Layer 8 at the end of the 2010 Wet Season Graphic
- EarthFx Model Simulations—Salinity Dissolved Solids Concentration in Layer 8 at the end of the 2015 Wet Season Graphic

DECLARATION

I sponsored the answers to Interrogatory Nos. 33 through 65 from **OPC'S THIRD SET OF INTERROGATORIES (NOS. 33-65)** to Florida Power & Light Company in Docket No. 160007-EI, and that the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.



Steven Scroggs

Date: 1/20/2017

Q.

Please identify and describe all measures FPL is currently taking to alleviate salinity in the TPCCS, and identify and describe all analyses that have been conducted towards evaluating the impact of those measures.

A.

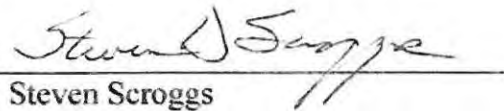
There are several initiatives that relate to abatement of hypersalinity in the CCS surface water.

1. FPL is adding 14 mgd of water from the UFA as authorized by a Site Certification Modification approved in 2016.
2. FPL is conducting sediment maintenance activities to improve the thermal efficiency of the CCS, allowing for reduced average system temperatures and therefore reduced evaporation.
3. FPL conducts vegetation management activities to ensure optimal cooling is provided to the system and that ground cover is maintained/ promoted to reduce erosion of berm materials into the CCS.
4. FPL has conducted an integrity inspection of the levee system, caissons and structures that define the perimeter of the CCS to ensure that there are no integrity concerns that would allow or lead to interchange between CCS surface waters and surface water bodies adjacent to the CCS.
5. FPL has recently retired Unit 1, a 400 MW steam boiler generation unit that relied on the CCS for cooling. While the decision to retire the Unit was not directed at lowering CCS salinity, the reduction of thermal input into the CCS will reduce the heat load and subsequent evaporation rate in the CCS.
6. FPL has also conducted a review of alternative means to abate salinity in the CCS. This analysis was submitted to Miami Dade County Department of Environmental Resources Management (DERM), in compliance with requirements of the October 2015 Consent Agreement between FPL and Miami Dade County.

DECLARATION

I sponsored the answers to Interrogatory Nos. 33 through 65 from **OPC'S THIRD SET OF INTERROGATORIES (NOS. 33-65)** to Florida Power & Light Company in Docket No. 160007-El. and that the responses are true and correct based on my personal knowledge.

Under penalties of perjury, I declare that I have read the foregoing declaration and the interrogatory answers identified above, and that the facts stated therein are true.



Steven Scroggs

Date: 1/20/2017

Effect of hypersaline cooling canals on aquifer salinization

Joseph D. Hughes · Christian D. Langevin ·
Linzy Brakefield-Goswami

Abstract The combined effect of salinity and temperature on density-driven convection was evaluated in this study for a large (28km²) cooling canal system (CCS) at a thermoelectric power plant in south Florida, USA. A two-dimensional cross-section model was used to evaluate the effects of hydraulic heterogeneities, cooling canal salinity, heat transport, and cooling canal geometry on aquifer salinization and movement of the freshwater/saltwater interface. Four different hydraulic conductivity configurations, with values ranging over several orders of magnitude, were evaluated with the model. For all of the conditions evaluated, aquifer salinization was initiated by the formation of dense, hypersaline fingers that descended downward to the bottom of the 30-m thick aquifer. Saline fingers reached the aquifer bottom in times ranging from a few days to approximately 5 years for the lowest hydraulic conductivity case. Aquifer salinization continued after saline fingers reached the aquifer bottom and coalesced by lateral movement away from the site. Model results showed that aquifer salinization was most sensitive to aquifer heterogeneity, but was also sensitive to CCS salinity, temperature, and configuration.

Keywords Coastal aquifers · Thermal conditions · Groundwater density/viscosity · Salt-water/fresh-water relations · USA

Introduction

Saline lakes, salt pans, playas, sabkhas, salinas, and salt flats develop in arid and semiarid environments throughout the world where evaporation exceeds precipitation

(Yechieli and Wood 2002). There is a potential for complex groundwater flow beneath these saline features because of unstable density stratification caused by higher density groundwater overlying lower density groundwater. Unstable density configurations can occur in many other natural settings such as along permeable zones where freshwater is in contact with saline layers, and around salt domes (Schincariol and Schwartz 1990). Unstable density-driven finger convection, a process which can augment mass transfer rates and expand the spatial extent of dissolved solutes, is a more effective transport mechanism than its stable counterpart (Nield et al. 2008). For this reason, density-driven free convection has been used to explain rapid salinization of coastal aquifers (Post and Kooi 2003).

Although natural saline systems are areally extensive (Yechieli and Wood 2002), engineered water-management systems can create comparable potential for density-driven convection in underlying aquifers and are important landscape components because of their proximity to populated areas and/or important water resources. Examples of engineered water management systems with potential for density-driven convection include (1) recirculating cooling systems with ponds or canals for thermoelectric power plants, (2) industrial waste disposal facilities, and (3) land-based saltwater aquaculture facilities. Recirculating cooling systems at thermoelectric power plants are of interest because they are common in populated areas, have high evaporation rates, and are the third largest consumptive water use after irrigation and industrial sectors (Yang and Dziegielewski 2007). There are 85 thermoelectric plants in the USA that utilize recirculating cooling ponds or canals (US Department of Energy 2005) with a total capacity of approximately 400,000 megawatt-hours of electricity (MWe-hr) and a maximum water consumption of 5,300 L(MWe-hr)⁻¹ (King et al 2008). In addition to increased salinities in thermoelectric cooling ponds and canals resulting from enhanced evaporation, these systems typically have temperatures that exceed ambient air temperatures by several degrees Celsius (°C) or more; these elevated temperatures decrease fluid density and can stabilize the effects of increased salinity.

Density-driven flow processes in saline systems and industrial waste disposal facilities have been evaluated conceptually and numerically by a number of researchers (e.g., Fan et al. 1997; Holzbecher 2005; Nield et al. 2008; Oostrom et al. 1992; Sanford and Wood 2001; Simmons et al. 1999). Thermohaline density-driven convection in porous media has also been evaluated by numerous researchers for

Received: 15 December 2008 / Accepted: 2 July 2009
Published online: 12 August 2009

© U.S. Geological Survey 2009

J. D. Hughes (✉)
US Geological Survey,
Florida Integrated Science Center,
10500 University Center Drive, suite 215, Tampa, 33612 FL, USA
e mail: jd Hughes@usgs.gov

C. D. Langevin · L. Brakefield Goswami
US Geological Survey,
Florida Integrated Science Center,
3110 SW 9th Avenue, Ft. Lauderdale, 33315 FL, USA

idealized systems with simple boundary conditions and conceptual permeability configurations (Chen and Chen 1993; Diersch and Kolditz 1998; Griffiths 1981; Nield 1968; Oldenburg and Pruess 1998; Rubin 1982; Rubin and Roth 1979, 1983).

The combined effect of salinity and temperature differences and aquifer heterogeneity on density-driven convection was evaluated in the present study at a thermoelectric power plant in south Florida, USA. The power plant contains a large cooling canal system with warm hypersaline water overlying a highly permeable limestone aquifer. The salinity of the cooling water is significantly greater than natural groundwater salinities in the area, and thus, the presence of unstable density-driven convection is likely. The potential for unstable density-driven convection is somewhat diminished, however, by cooling water temperatures that are significantly greater than local groundwater temperatures. The site is important because the facility is located in the vicinity of several public water supply well fields, adjacent to sensitive ecological areas, and near the freshwater/saltwater interface.

Representative geometric and hydrologic characteristics of the site and surrounding area were used to develop a simplified two-dimensional cross-sectional model of variable-density groundwater flow, solute transport, and heat transport. As this work presents a first assessment on the hydrologic impacts of these types of cooling systems, the model was not calibrated, but was instead used to examine sensitive hydrogeologic parameters, to provide insight into the hydrologic effect of the cooling canals, and to provide guidance for monitoring and data collection at this site as well as other sites with similar density contrasts and hydraulic properties. Specifically, numerical results are used in this paper to determine (1) the behavior of density-driven convection, (2) the time required for high-salinity and high-temperature plumes to reach the bottom of the aquifer, (3) the aquifer salinization rate, and (4) the movement of the freshwater/saltwater interface. These factors were evaluated for different, but realistic, hydraulic conductivity configurations, initial salinity and temperature distributions, dependence of fluid density on temperature, cooling system salinity, and cooling system configurations.

General description of the study area

The study area is located at Turkey Point in southeastern Florida, USA (Fig. 1). Biscayne National Park, which includes much of the shallow Biscayne Bay marine estuary, lies east and northeast of the study area. Card Sound is east and southeast of Turkey Point, developed areas of Miami-Dade County are located to the northwest, and the Florida Everglades are directly west of the site. The study area has a subtropical climate with mean air temperatures ranging from 24.0 to 25.0°C, mean Biscayne Bay water temperatures ranging from 25.4 to 27.9°C, annual rainfall ranging from 1,270 to 1,524 mm, and annual evapotranspiration ranging from 1,077 to 1,301 mm (German 2000).

The Turkey Point power generation facility is operated by Florida Power and Light and supplies electricity to south Florida. The facility includes two nuclear and two fossil fuel generation units with a 2,324 MWe-hr capacity rating (US Department of Energy 2000). A closed-loop cooling canal system (CCS) covering 28 km² is used to cool non-contact cooling water from the nuclear and fossil fuel generation units (Gaby et al. 1985).

Specifics of the CCS are detailed in US Nuclear Regulation Commission (2002) and are summarized below. At its maximum extent, the CCS consists of 32 canals that carry warm water south from the plant and 8 canals that return water to the plant (Fig. 1). The canals, separated by 27-m-wide berms, are approximately 60 m wide with water depths ranging from 0.3 to 1 m. The easternmost canal was excavated to approximately 5.5 m below mean sea level (H. A. Frediani, Jr., Golder Associates, Inc., personal communication, 2008). The berms were created from material dredged during canal construction, and range from 1 to 5 m in height (Gaby et al. 1985). Maximum water temperatures range from 28 to 43°C where plant discharge occurs and are reduced approximately 2°C, ranging between 27 to 41°C, after traveling the nearly 270 km length of the CCS back to the plant intake (US Department of Energy 2000).

The canal system does not discharge directly to fresh or marine surface waters. Makeup cooling water for the canal system, required to replace evaporative losses, comes from treated process water, incident rainfall, stormwater runoff, and likely groundwater inflows (Florida Power and Light 2000). Exchange of water between the canal system and groundwater is likely because the canals are unlined. An interceptor canal is located along the west side of the canal system (Fig. 1) and is used to create an artificial groundwater gradient from the area west of the CCS into the ditch by pumping water from the interceptor canal into the CCS during the dry season. This is intended to prevent shallow westward flow of hypersaline water from the cooling canals.

The study area is underlain by an unconfined surficial aquifer system that includes a layer of peat, muck, marl, and/or fill and the underlying Pliocene-Pleistocene Biscayne aquifer composed of porous limestone (Cunningham et al. 2006). The vertical extent of the Biscayne aquifer is defined as areas where highly permeable materials are at least 3 m thick and have a minimum hydraulic conductivity of 300 m/day (Fish 1988). The upper peat, muck, marl, and/or fill materials are generally less than 2 m thick (Reese and Cunningham 2000) and have hydraulic conductivities ranging from 0.12 to 12 m/day for 12 distinct soil types in the study area (Noble et al. 1996). The bulk hydraulic conductivity of the Biscayne aquifer in the vicinity of the study area ranges from approximately 2,700 to 7,300 m/day (Fish and Stewart 1991). Cunningham et al. (2006) measured hydraulic conductivities ranging from 0.001 to 22,929 m/day and determined lithofacies-based median horizontal hydraulic conductivities for low permeability (480 m/day), moderate permeability (2,300 m/day), and high permeability (7,000 m/day) portions of the Biscayne

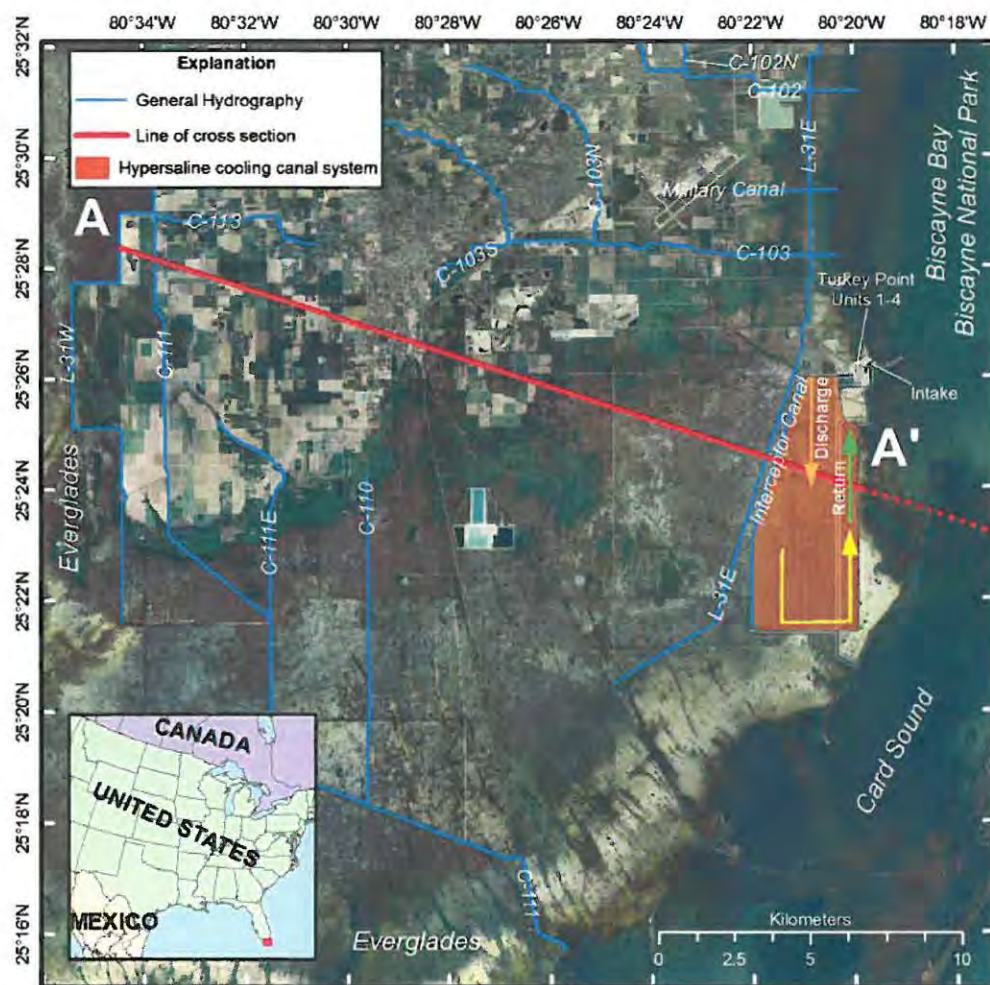


Fig. 1 Location of study area and two dimensional cross section model developed for the Turkey Point hypersaline cooling canal system. The line of cross section (red) does not show the full extent of the model and has been dashed in offshore areas of the model. The cross section model extends approximately 15,500 m further offshore. General hypersaline cooling canal system flow directions (orange, yellow and green arrows) and the location of the discharge canals, return canals, intake canal, and power generation units are shown

aquifer; the Cunningham et al. (2006) work was conducted in western portions of the study area and has been applied in numerical models developed for the area (Shoemaker et al. 2008). High permeability values are characteristic within thin (decimeter-scale), sheet-like preferential flow layers of the Biscayne aquifer with touching vug porosity.

Simulation of the groundwater flow system

The SEAWAT model

The US Geological Survey computer program, SEAWAT (Guo and Langevin 2002; Langevin et al. 2003; Langevin and Guo 2006; Langevin et al. 2007), was used to simulate coupled heat transport, total dissolved solids (TDS) transport, and groundwater flow in the Biscayne aquifer. The latest SEAWAT version (Version 4; Langevin et al. 2007) couples MODFLOW-2000 (Harbaugh et al. 2000) with MT3DMS (Zheng and Wang 1999) and allows density to be calculated as a function of one or more solute species and temperature. Use of SEAWAT to

simulate heat transport is limited to evaluation of fully saturated porous media. Dausman et al. (2009) tested this latest version by simulating six solute and heat transport benchmark problems. Langevin et al. (2009) performed additional testing by simulating a laboratory experiment in which warm freshwater was used to recharge a large sand-filled glass tank with a cold saltwater reservoir at one end.

Model construction

The model developed for this study is patterned after the geometric configuration and hydrologic conditions of the CCS at Turkey Point. In many instances, details on the specific hydrologic conditions at the site were unavailable, including a description of aquifer hydraulic properties. For this reason, the numerical analysis presented here focuses on identifying the important physical processes and controls on density-driven convection and aquifer salinization for a variety of realistic hydraulic conductivity configurations.

The location of the cross-section model of the Biscayne aquifer for the study area is shown in Fig. 1. Aquifer and fluid properties used for the simulations are summarized in Table 1. The cross-section model is approximately 46 km in length and is discretized using a total of 718 columns horizontally and 30 layers vertically (21,540 active grid cells) using the model grid shown in Fig. 2. Column widths vary from 10 m in the area of the CCS and increase to 200 m in western portions of the model, in Biscayne Bay, and further offshore in the Atlantic Ocean. A constant layer thickness of 1 m was used throughout the model domain.

A number of different hydraulic conductivity configurations were evaluated and are discussed in detail in the following section. An effective porosity of 0.20 was used in all grid cells and is comparable to the median total porosity (0.24) measured by Cunningham et al. (2006) in 267 Biscayne aquifer core samples. Specific yield and specific storage values were set to zero in the cross-section model for all simulations. This simplifying assumption was used because the primary objective of the cross-section model is to evaluate the relative response of the system to a number of plausible hydraulic conductivity and boundary condition configurations. The interceptor canal was constructed to reduce the effect of the CCS on groundwater levels. As a result, it is expected that average water levels in the Biscayne aquifer have not changed noticeably and storage changes have been minimal. Changes in groundwater in storage would result in longer

aquifer response times than simulated in the present model but relative differences in transport times between different hydraulic conductivity configurations would remain the same. As a result, simulated results represent a conservative estimate of transport times.

Boundary conditions, the types and locations of which can be seen in Fig. 2, were assigned in the cross-section model based on average conditions in the study area. A freshwater constant head, constant temperature boundary was specified in model layers 1 through 30 on the western boundary (column 1) of the model based on average Biscayne aquifer water levels and temperature (Langevin 2001). Aquifer recharge and discharge, which exhibit a strong seasonal component, were not represented for the agricultural areas and coastal wetlands located between the western model boundary and L-31E. Instead, a no-flux condition (for flow and transport) was specified for the model surface and groundwater flow was represented as confined flow. This simplification results in regional groundwater flow entering solely from the western boundary and does not consider small spatial and temporal variations in local recharge. Head-dependent flux boundary conditions (GHB) with constant temperatures were specified for canal L-31E and the interceptor canal in model layer 1 based on Dames and Moore (1989) and Langevin (2001, 2003). GHBs with constant TDS concentrations and temperatures were specified in model layer 1 for the CCS (US Department of Energy 2000); CCS GHBs for the eastern canal were extended to model

Table 1 Model parameters used in the two dimensional cross section model

Freshwater TDS concentration	C_0 C_{fw} 0.000[‰]
Seawater TDS concentration	C_{sw} 35[‰]
Cooling canal TDS concentration	C_{cp} 70[‰] (base case)
Freshwater fluid density	ρ_{fw} 998.2[kg/m ³] at 20°C
Saltwater fluid density	ρ_{sw} 1,024.5[kg/m ³] at 20°C
Cooling canal fluid density	ρ_{cp} 1,050.7[kg/m ³] at 20°C (base case)
Fluid density TDS concentration relation	$\frac{\partial \rho}{\partial C} = 0.75 \text{ [kg / (}^\circ\text{‰ m}^3\text{)]}$
Reference temperature	T_o 20[°C]
Land surface temperature	T_{Land} 24.4[°C]
Seawater temperature	$T_{Seawater}$ 26.2[°C]
Cooling canal fluid temperature	T_{cp} 35.6 [°C] (discharge) or 34.2 [°C] (return)
Fluid density temperature relation	$\frac{\partial \rho}{\partial T} = 0.375 \text{ [kg / (}^\circ\text{C m}^3\text{)]}$ (base case)
Reference viscosity	μ_o 0.001[kg/(ms)]
Viscosity temperature relation	$\frac{\partial \mu}{\partial T}$ 0[kg/(ms)]
Longitudinal dispersivity	α_L 5 [m]
Horizontal transverse dispersivity	α_T 0.5 [m]
Vertical transverse dispersivity	α_V 0.5 [m]
Molecular diffusion coefficient for salt	D_M 1.477×10^{-9} [m ² /s]
Distribution coefficient for salt	K_{DC} 0.0000 [m ³ /kg]
Porosity	θ 0.2 []
Solid matrix density	ρ_{SOLID} 2,710[kg/m ³]
Specific heat of the fluid	c_F 4,183[J/(kg°C)]
Specific heat of the solid	c_S 835[J/(kg°C)]
Distribution coefficient for temperature	K_{DT} 2.0000×10^{-4} [m ³ /kg]
Thermal conductivity of fluid	λ_W 0.61[J/(m°Cs)]
Thermal conductivity of solid	λ_S 3.59[J/(m°Cs)]
Bulk thermal conductivity	λ_{Bulk} 2.994[J/(m°Cs)]
Bulk thermal diffusivity	D_T 3.5788×10^{-6} [m ² /s]

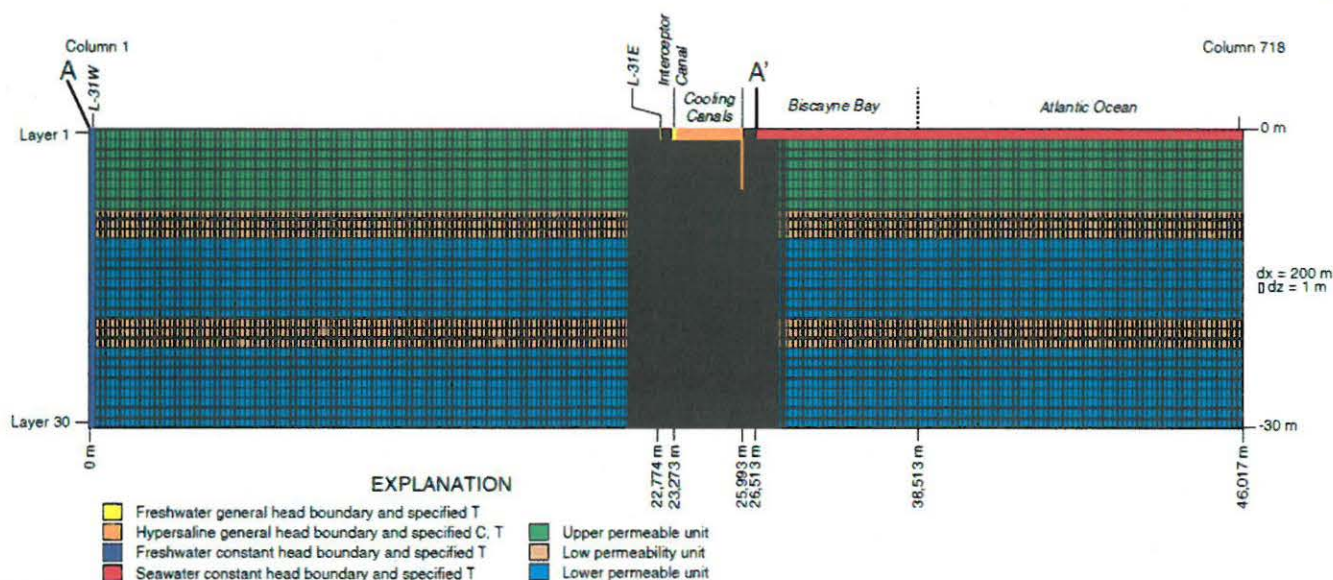


Fig. 2 Model grid, boundary conditions, and hydraulic conductivity zones evaluated. The location *A* to *A'* in the two dimensional cross section model is shown in Table 1. Model parameters used in the two dimensional cross section model and the hydraulic conductivity values associated with each hydraulic unit is summarized in Table 2

layer 6 to represent its deeper connection with the Biscayne aquifer (H. A. Frediani, Jr., Golder Associates, Inc., personal communication, 2008). Constant TDS concentrations were specified for the CCS GHBs based on an assumption that these features would always be a source of salt as a result of (1) enhanced evaporation from the system because of the thermal contrast between CCS water and the atmosphere (2) use of makeup water sourced from seepage of saltwater from Biscayne Bay, and (3) recirculation of CCS water captured by the interceptor canal and pumped back into the cooling canals. An upper TDS concentration of 70‰ was assigned for the CCS based on unpublished Florida Power and Light quarterly reports containing measured groundwater salinities in monitoring wells adjacent to the site. A lower TDS concentration of 35‰ was also tested.

For the range of TDS concentrations and temperatures evaluated, density variations resulting from maximum temperature variations are not sufficient to compensate for density variations resulting from TDS concentrations. Density variations resulting from the maximum range of TDS concentrations of 70 and 35‰ are 52.5 and 26.3 kg/m³, respectively. Conversely, density variations resulting from the maximum range of temperatures (land surface temperature – discharge CCS fluid temperature = 11.2 °C) is –4.2 kg/m³.

Exchange between GHBs and the Biscayne aquifer is controlled by a conductance value and the simulated difference between the specified GHB head and simulated head in the grid cell. GHB conductance values were calculated as the product of the exchange area ($\Delta x \cdot \Delta y$), a hydraulic conductivity of 3 m/day, and a simulated connection distance between the grid cell and GHB of 1 m. The values for Δx and Δy underneath the CCS are 10 and 30 m, respectively. A constant head, constant temperature seawater boundary was specified along the

eastern portion of the model (columns 568–718) in model layer 1 based on Langevin (2001). Since the Biscayne aquifer is an unconfined aquifer and the model was extended 20 km offshore, a zero-flux boundary was defined for model layers 2–30 on the eastern side of the model. All other boundaries are defined as no flux boundaries. Heads, TDS concentrations, and temperatures specified for boundary conditions are shown graphically in Fig. 3.

An upstream weighted, finite-difference numerical transport scheme was used to simulate TDS and heat transport. The model was run for a total of 18,250 days (50 years) with three periods (MODFLOW stress periods) having lengths of 9,125 days, 1 day, and 9,124 days in order to represent unique boundary condition configurations and/or specific maximum time-step lengths. Maximum time step lengths of 1 day, 0.1 days, and 1 day were used for MODFLOW stress period 1, 2 and 3, respectively. Flow and transport were explicitly coupled for the simulations using a one time-step lag. GHBs and associated constant TDS concentration and temperature boundary conditions representing the CCS were not active during the first MODFLOW stress period in order to achieve steady-state conditions consistent with defined lateral boundary conditions and aquifer properties used in the simulation. Heads, TDS concentrations, and temperatures from previous simulations run to steady-state without the CCS were used to define initial conditions for all of the simulations.

The total length of MODFLOW stress periods 2 and 3 (25 years) is roughly based on completion of the CCS in 1974 (Gaby et al. 1985) and use of cooling canal data for the year 2000 (US Department of Energy 2000) rather than running the simulations to steady-state. The length of MODFLOW stress period 2 was restricted to a single day to better resolve the initial progression of seepage from the base of the CCS.

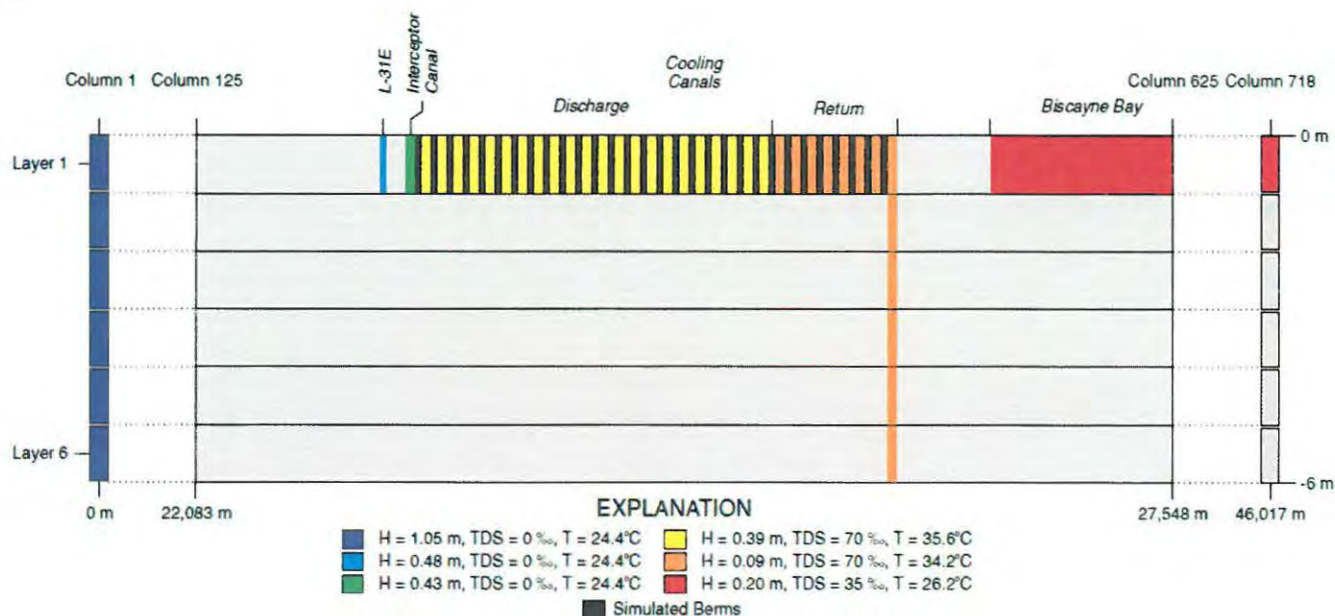


Fig. 3 Configuration of boundary condition heads, TDS concentrations, and temperatures in the vicinity of the cooling canal system in the two dimensional cross sectional model

Model results

The two-dimensional cross-section model was used to evaluate the effects of hydraulic heterogeneities, cooling canal TDS concentrations, heat transport, and cooling canal geometry on seepage of saline to hypersaline water from the CCS and movement of the freshwater/saltwater interface. The cumulative effects of hydraulic conductivity heterogeneities in combination with cooling canal TDS concentrations, heat transport, or cooling canal geometry were considered and are discussed in detail below. The effect of TDS concentration and temperature on fluid viscosity was not evaluated; the reference fluid viscosity shown in Table 1 was used in all simulations. Because hydraulic conductivity is a function of the ratio of fluid density (ρ) to fluid viscosity (μ) and the reference fluid viscosity (μ_0) was used in all simulations, simulated results represent a conservative estimate of groundwater flow induced by elevated TDS concentrations and temperatures in the CCS. Simulations evaluating the effects of hydraulic conductivity, where fluid density is a function of TDS concentrations and temperature, are referred to as "base simulations." These "base simulations" are referred to in subsequent analyses of the effects of cooling canal TDS concentrations, heat transport, and cooling canal

geometry on seepage of hypersaline water from the CCS and the position of the freshwater/saltwater interface.

Effects of aquifer heterogeneity on cooling canal seepage

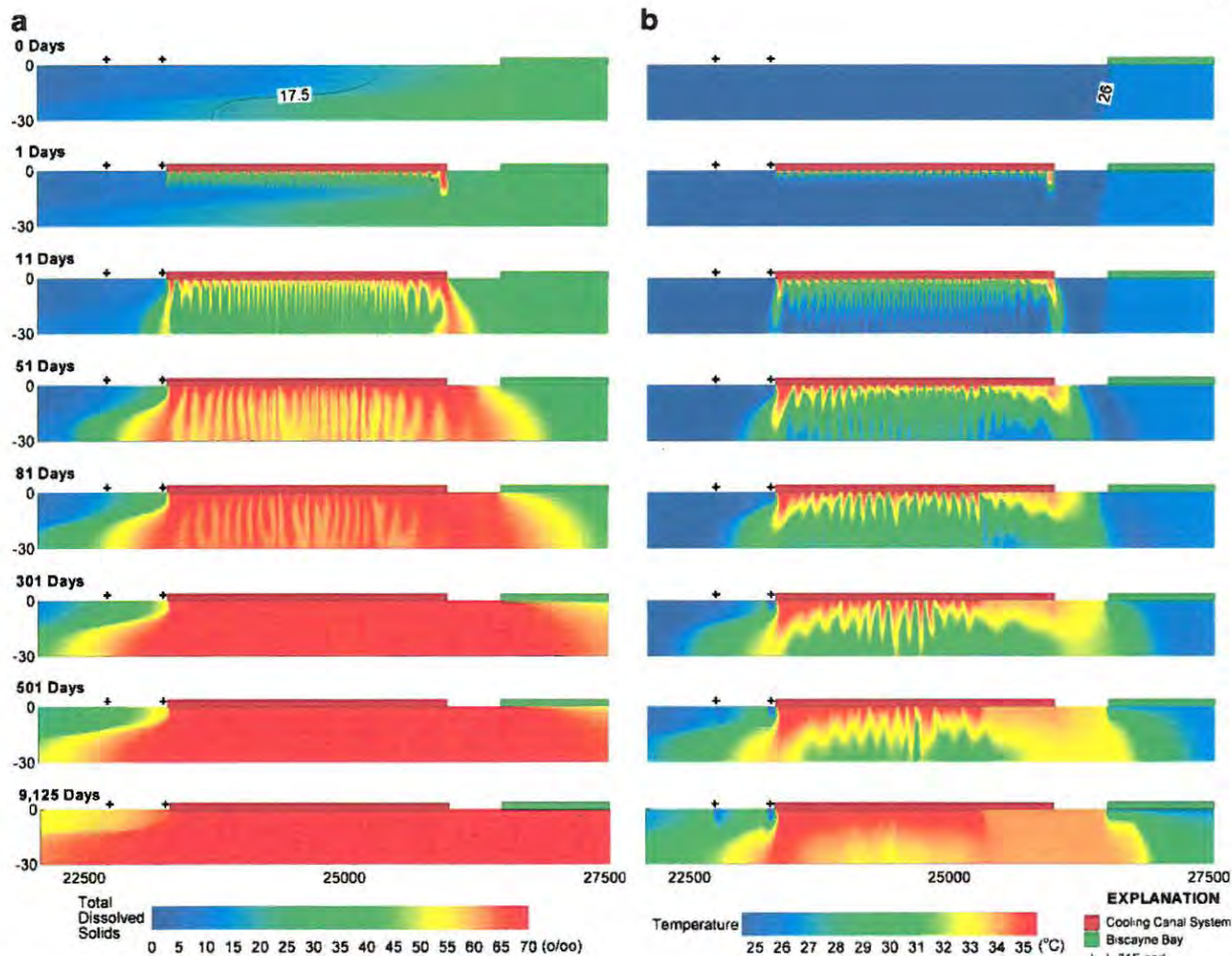
Four different hydraulic conductivity configurations were evaluated to determine the effects on cooling canal seepage and the position of the freshwater/saltwater interface. Fluid density in these simulations is a function of TDS concentrations and temperature using the parameters defined in Table 1. Hydraulic conductivity in the model was discretized into upper and lower permeable units with intervening units that can serve as low permeability confining units (Fig. 2). Hydraulic conductivity values used in the defined permeability units in cases A, B, C, and D, as summarized in Table 2, are within the range of values reported by Cunningham et al. (2006), Fish (1988), and Noble et al. (1996). The configuration evaluated in case C and D is comparable to the hydrogeologic framework in western portions of the study area (Cunningham et al. 2006).

The spacing of canals and berms in the CCS establishes a horizontally perturbed, unstable density configuration that in combination with high aquifer

Table 2 Hydraulic conductivity configurations evaluated with the two dimensional cross section model

Hydraulic unit	Case A	Case B	Case C	Case D
Upper permeable unit	K_h 10,000 K_v 100	K_h 1,000 K_v 10	K_h 1,000 K_v 10	K_h 1 K_v 0.1
Low permeability unit	K_h 10,000 K_v 100	K_h 1,000 K_v 10	K_h 1 K_v 1	K_h 1 K_v 1
Lower permeable unit	K_h 10,000 K_v 100	K_h 1,000 K_v 10	K_h 1,000 K_v 10	K_h 1,000 K_v 10

Horizontal and vertical hydraulic conductivity (m/day) are shown for each case. The spatial distribution of defined hydraulic units is shown in Fig. 2



permeability, leads to the development of lobate-shaped hypersaline plumes (fingers). These finger plumes develop for all four hydraulic conductivity cases. For illustrative purposes, simulated TDS concentrations and temperatures for selected times in the immediate vicinity of the CCS are shown for case A (Fig. 4). Results prior to installation of the CCS show that fresh groundwater is discharging to L31-E and brackish groundwater is discharging to Biscayne Bay, the freshwater/saltwater interface is located in the vicinity of the CCS, and a convective saltwater flow system is developed seaward of the freshwater/saltwater interface. Hypersaline water begins to enter the Biscayne aquifer immediately after the CCS is installed and arrives at the base of the aquifer within 10 days. Unstable convective flow patterns result from the plumes descending downward into the aquifer; as the denser plumes descend relatively fresh groundwater is forced upward in the areas between the plumes. After about 300 days, all hypersaline plumes have reached the bottom of the aquifer and movement of hypersaline water is predominantly horizontal away from the CCS. Hypersaline water moves

the position of the freshwater/saltwater interface landward, out of the extent of results shown in Fig. 4. The freshwater/saltwater interface does not reach steady-state east of the CCS at the end of the simulation.

Thermal finger plumes also develop for the four hydraulic conductivity cases. In general, these thermal plumes are more diffuse and move slower than the hypersaline plumes. As shown for case A, thermal plumes develop immediately after CCS installation and begin to arrive at the base of the aquifer within about 10 days (Fig. 4). Distinct thermal finger plumes persist for at least 500 days. Vertical heat transport is not as rapid as vertical salt transport in the simulation with temperatures less than specified CCS temperatures at the base of the aquifer observed at the end of the simulation. The lateral extent of the aquifer affected by the thermal plume is less than the extent affected by the hypersaline plume as a result of specified temperature boundaries for L-31E, the interceptor canal, and Biscayne Bay.

Simulation results for cases B, C, and D also show development of hypersaline finger plumes, the primary

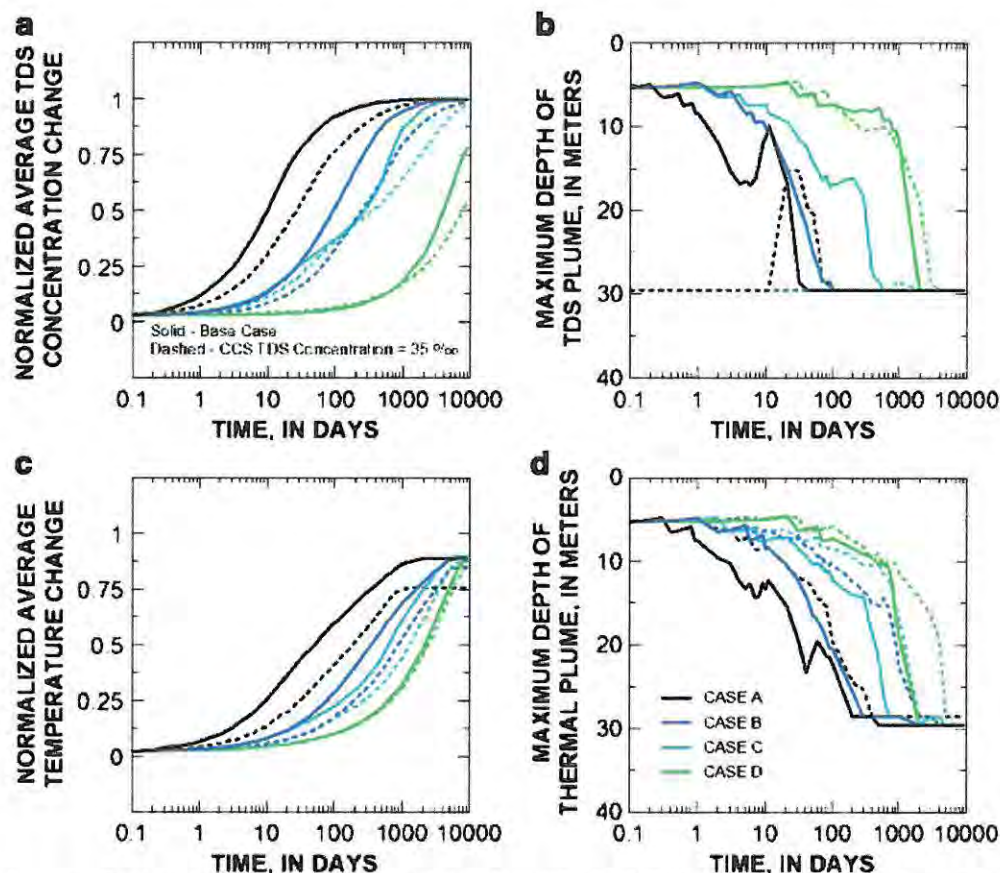


Fig. 5 Simulated **a** normalized average TDS concentration, **b** maximum depth of TDS plume concentration, **c** temperature changes and **d** maximum depth of thermal plumes directly below the CCS

difference between the four cases being the rates of vertical mass transfer and aquifer salinization. The normalized average TDS concentration change $[(C - C_{t=0}) / (C_{cp} - C_{t=0})]$ was calculated for the aquifer domain directly beneath the CCS and is plotted in Fig. 5a as a function of time. All cases yield a similar temporal pattern in the increase of average TDS concentration. The aquifer becomes entirely hypersaline beneath the CCS for cases A, B, and C. For case D (the lowest permeability case), the aquifer does not become entirely hypersaline within the simulation period, but it appears that it would do so if given enough time. Maximum hypersaline plume depth beneath the CCS is shown in Fig. 5b as a function of time. For cases A and B, hypersaline plumes reach the bottom of the aquifer in less than 100 days; for cases B and C, the plumes arrive at the base of the aquifer after about 600 and 2000 days, respectively. The apparent upward movement of the TDS plume for case A (Fig. 5b) is caused by the easternmost plume moving outside of the analysis window, which is confined to the area directly beneath the CCS. These results quantify the importance of hydraulic conductivity on rates of aquifer salinization beneath the CCS.

The normalized average aquifer temperature change $[(T - T_{t=0}) / (T_{cp} - T_{t=0})]$ beneath the CCS is shown for all four cases in Fig. 5c. Heating of the aquifer to the specified CCS temperature is clearly delayed compared to the aquifer salinization process (compare Fig. 5c with a). This delay occurs due to the thermal equilibration between

the solid aquifer matrix and the ambient groundwater. As the thermal plumes sink downward through the aquifer, vertical movement is delayed by the transfer of thermal energy from the water to the aquifer matrix. The delay is not observed for the hypersaline finger plumes because salt is not absorbed by the aquifer matrix. Comparison of the maximum thermal plume depth (Fig. 5d) with the maximum hypersaline plume depth (Fig. 5b) also shows that the thermal plumes tend to move slower than the hypersaline plumes.

Average simulated GHB flow rates for cases A, B, C, and D are 58, 10, 7.9, and 0.38 mm/day, respectively. GHB flow rates exceed the difference between average daily rainfall (3.5–4.2 mm/day) and evapotranspiration (2.9 to 3.6 mm/day) rates for cases A, B, and C and indicate inflows to the CCS from plant discharge and groundwater seepage from Biscayne Bay would have to be on the order of GHB flow rates or higher to maintain CCS water levels. At a maximum plant discharge of 580 mm/day (Lyerly 1998), maximum GHB flow rates (case A) would represent approximately 10% of the plant discharge to the CCS.

Increase in aquifer salt content and position of the freshwater/saltwater interface

The effect of the CCS on the increase in total aquifer salt content is shown in Fig. 6. Use of the total aquifer salt

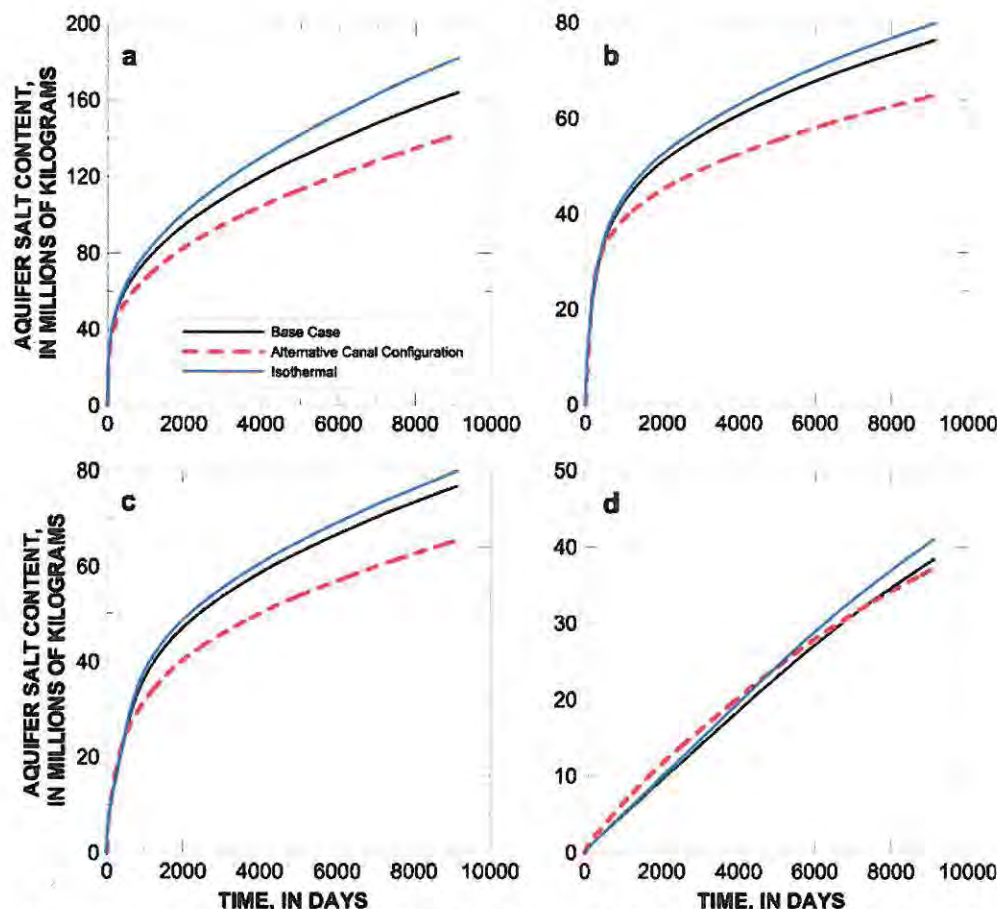


Fig. 6 Simulated increases in salt content ($\text{kg} \times 10^6$) of the aquifer as a result of CCS seepage, for cases A to D (a–d). *Base case* refers to simulations with canal TDS concentrations of 70‰. The *alternative canal configuration* simulation setup is the same as the base case except berms separating canals have been removed. The *isothermal* simulation setup is the same as the base case except temperature does not affect fluid density

content here is intended to evaluate aquifer salinization over the entire length of the cross section; in the previous section, the aquifer salinization focused on the area directly beneath the CCS. Increases in total salt content provide another measure of hypersaline water seepage from the CCS to the aquifer. Salt content results indicate that the salt increase for case A is approximately a factor of 2 greater than case B and C and approximately a factor of 4 greater than case D. In cases A, B, and C, approximately one half of the salt increase occurs in the first 1,000 days and asymptotically increases over the remainder of the simulation period. The increase in the salt content of the aquifer is roughly linear over the entire simulation period for case D.

The effect of the CCS on the position of the 1‰ TDS concentration at the base of the aquifer is shown in Fig. 7. Horizontal distances of this contour are measured relative to the starting location at the base of the aquifer prior to CCS installation. The relative movement of the 1‰ TDS concentration is greatest (12,000 m) for case A with this case yielding movement approximately 4 times greater than case B and C and a factor of 30 greater than case D. Movement of 1‰ TDS concentration also occurs quickly in case A. Movement of the position of the 1‰ TDS concentration is limited until approximately 1,000 and

2,000 days in cases B and C, respectively, and is roughly linear. Movement of the 1‰ TDS concentration in case D is slow until approximately 5,000 days and is roughly linear until the end of the simulation.

Effects of TDS concentrations on cooling canal seepage

To evaluate the effect of CCS salinity on aquifer salinization, the four hydraulic conductivity configurations were also simulated using a CCS salinity value equal to seawater (35‰) instead of the hypersaline value (70‰) used in the base simulations. Compared to the base simulations, these simulations with a seawater salinity CCS also show lobate-shaped salt fingers descending downward into the aquifer; however, the fingers descend slower because of the reduced density contrast between the CCS and ambient groundwater. Aquifer salinization is also slower for these cases simply because the TDS concentration of the CCS was halved. These points are evident in Fig. 5a. For cases A, B, and C, normalized average TDS concentration changes beneath the CCS reach 70‰ between 100 and 1,000 days. In contrast, the normalized average TDS concentration change does not approach 35‰ for these cases until after 1,000 days.

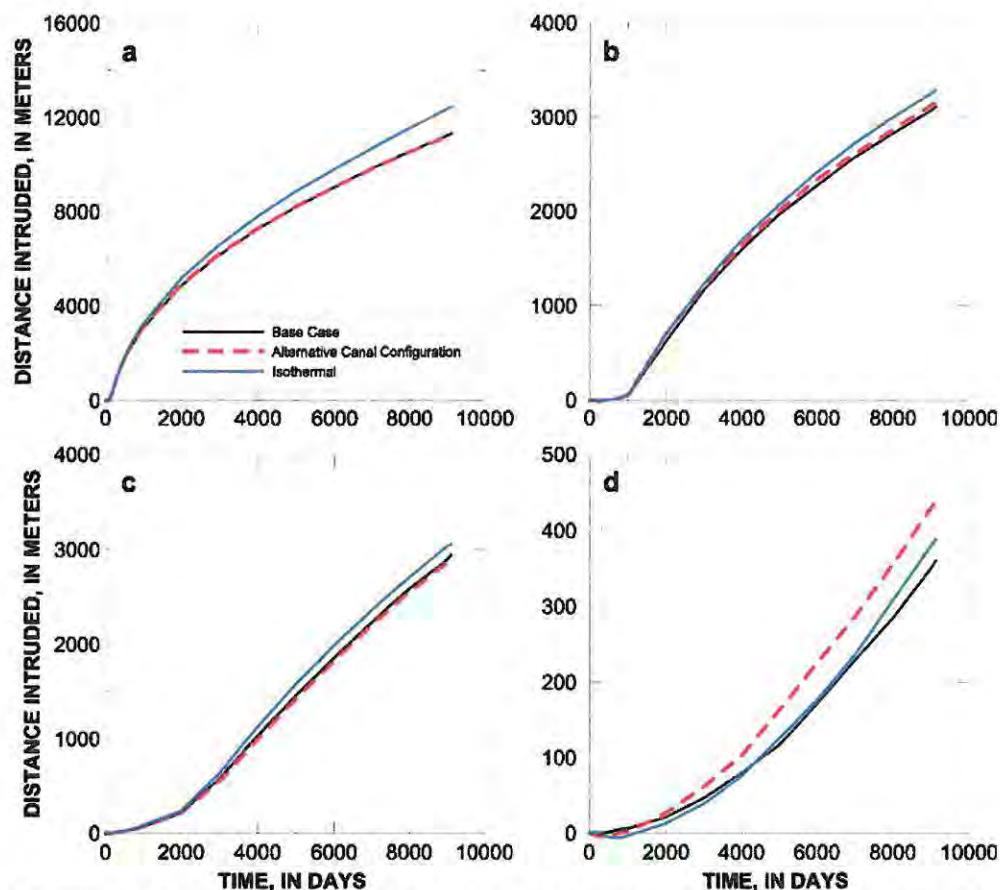


Fig. 7 Simulated movement of the 1‰ TDS concentration at the base of the aquifer. Results for the CCS with and without the dependence of fluid density on temperature and the Alternative CCS (cooling canal system) with the dependence of fluid density on temperature are shown for cases A to D (a d)

Plots of aquifer salt content and movement of the 1‰ TDS concentration at the base of the aquifer are shown in Fig. 8. Although downward plume movement is generally slower for the seawater salinity CCS simulations (Fig. 5b, d), the aquifer salt content reaches equilibrium faster than for the equivalent base simulations. Initial values for the maximum depth of the TDS plume (Fig. 5b) for cases A and B with a CCS TDS concentration of 35‰ are a result of the presence of saltwater at the base of the aquifer when the CCS is installed. Fig. 8a shows that the aquifer salt content for case A reached equilibrium within about 10 years, and that the content for cases B, C, and D is approaching equilibrium by the end of the simulation. In contrast, none of the base simulations reached equilibrium in aquifer salt content within the 25-year simulation (Fig. 6). Total salt accumulation within the aquifer for the 35‰ CCS simulations is much less than the salt accumulation for the base simulations. Differences in aquifer salt content between the 35 and 70‰ base simulations by a factor of 2 would be expected and explained simply by the concentration difference of the CCS seepage. However, the salt content at the end of the simulation for the case A base simulation (160×10^6 kg) is more than 10 times larger than the salt content with a 35‰ CCS (15×10^6 kg). This means that the average CCS seepage rate for the hypersaline base simulation is about 5

times greater than the average seepage rate for seawater salinity cooling canals. The other hydraulic conductivity cases show similar relations. Salt accumulation for the base simulations are between 6 and 8 times greater than the same cases with seawater salinity canals.

Simulation results indicate that inland movement of the saltwater interface at the base of the aquifer is highly sensitive to the TDS concentration of the CCS. For example, in the case A simulation with seawater salinity cooling canals, the interface reached an equilibrium position almost 2 km inland from its initial position after about 10 years (Fig. 8b). This is less than the 2-km width of the CCS because water levels on the western side of the canals are higher than sea level by 0.19 m. For the same case with a hypersaline CCS, the saltwater interface moved inland by almost 12 km after 25 years, but had not yet reached its equilibrium position. Thus, for this particular hydraulic conductivity case, doubling the TDS concentration of the CCS resulted in the interface moving farther inland by at least a factor of 6.

For the lowest hydraulic conductivity case (case D), there is a pronounced movement of the toe in the opposite (seaward) direction, at least for the 25-year simulation period (Fig. 8b). Most of the other cases also show this curious response, but the response is so slight that it cannot be seen in the plots. Although this response is

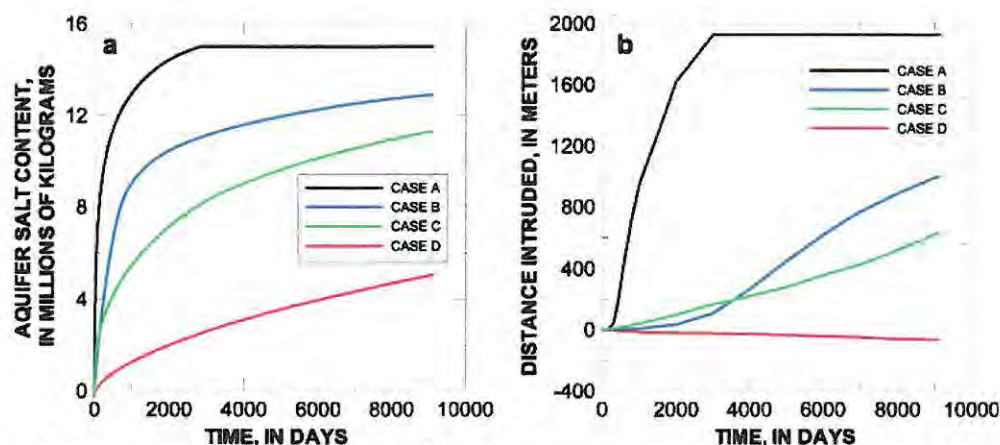


Fig. 8 Simulated **a** increases in aquifer salt content ($\text{kg} \times 10^6$) and **b** movement of the 1‰ TDS concentration at the base of the aquifer for simulations with specified cooling canal TDS concentrations of 35‰

counterintuitive, it can be explained as a transient response to the redirection of freshwater outflow. As the saline fingers descend from the base of the CCS, the natural outflow face to Biscayne Bay becomes hydraulically separated from the regional flow system. As this occurs, regional freshwater flow is redirected into surface water features inland of the CCS. This redirection causes the saltwater interface to be temporarily eroded by freshwater. With the exception of case D with seawater salinity cooling canals, movement of the freshwater/saltwater interface eventually proceeds as saline water from the CCS reaches the bottom of the aquifer and moves inland.

Effects of heat on cooling canal seepage

The importance of temperature variations on canal seepage and groundwater flow patterns was evaluated by eliminating the dependence of fluid density on temperature and comparing results with the base simulations. Although heat transport was represented in these simulations, they are referred to here as “isothermal” in Figs. 6 and 7 because simulated temperatures do not affect groundwater flow. This analysis does not consider the effect of cooling canal temperature on evaporation, which is thought to be an important component of the CCS water budget.

In general, temperature variations have only a minor affect on seepage rates, flow patterns, and the time for normalized average TDS concentration changes to achieve maximum concentrations beneath the CCS (Fig. 9). The increase in aquifer salt content over time, however, shows a measurable response to the effects of temperature (Fig. 6). For case A, aquifer salt content is about 10% less at the end of the simulation when the effects of temperature are included. For cases B, C, and D, the percentage is less (5, 4, and 6%, respectively). Saltwater intrusion also shows a measurable response to the effects of temperature (Fig. 7). When temperature effects are neglected, the interface moves farther inland by a distance

of 1,141, 175, 113, and 28 m for cases A, B, C, and D, respectively.

Effects of cooling system geometry on cooling canal seepage

The existing configuration of canals and berms in the CCS establishes a horizontally perturbed, unstable density configuration that leads to the development of lobate-shaped hypersaline plumes and increases vertical mass-transfer rates. To evaluate the effect of the geometry of the CCS on seepage of hypersaline water into the aquifer, an alternative geometric configuration (alternative CCS) that eliminates the horizontal perturbed density configuration was simulated. For this alternative case, the cooling system was assumed to be composed of a contiguous pond, segregated into discharge and intake portions, and covering the combined area of canals and berms in the CCS. To ensure that TDS mass flux was comparable to the flux observed in the base simulations GHB conductance was scaled by the ratio of the canals in the CCS and the total area of canals and berms in the CCS. Specified GHB heads, TDS concentrations, and temperatures are identical to those used in the base simulations (see Fig. 3).

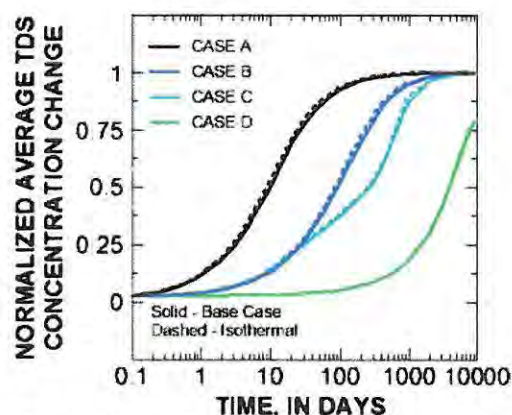


Fig. 9 Simulated normalized average TDS concentration changes directly below the CCS for the base and isothermal simulations

The temporal and vertical progression of hypersaline and relatively high temperature water in alternative CCS simulations for hydraulic conductivity configuration cases A, B, C, and D is comparable to the base simulations. Alternative CCS case D exhibited the greatest difference; seepage from alternative CCS was concentrated in the eastern end of the discharge portion of the CCS and increased the horizontal extent of the predominant area of vertical movement of hypersaline and high temperature water by approximately 500 m. Distinct hypersaline and thermal plumes were not as well developed in alternative CCS simulations. Differences in simulated times for hypersaline and thermal plumes to reach the bottom of the aquifer, mass transfer, and movement of the freshwater/saltwater interface is a result of larger perturbation wavelengths in the alternative CCS simulation which reduce instability development and vertical mass transfer (Menand and Woods 2005).

The effect of the alternative CCS on the salt content of the aquifer is shown in Fig. 6. Relative to the base simulations, initial salt increases (prior to 400 days) are slightly larger, as a result of the larger area of the CCS. Furthermore, the maximum aquifer salt increase is less for cases A, B, and C by approximately 12, 13, and 15%, respectively, as a result of decreased hypersaline and thermal plume development. The maximum aquifer salt increase is comparable in alternative CCS case D and the base case D simulation; initial aquifer salt content increases are slightly larger in alternative CCS case D until approximately 7,500 days as a result of the increased horizontal extent of the CCS in this simulation. The temporal response of salt content increases in the aquifer is comparable to the base simulations.

The effect of the alternative CCS on the position of the 1‰ TDS concentration at the base of the aquifer is shown in Fig. 7. The relative movement of the 1‰ TDS concentration is comparable to the base simulation for cases A, B, and C as a result of similarity between the location of the western most hypersaline plumes in the base and alternative CCS simulations. The timing and magnitude of the relative movement of the 1‰ TDS concentration for alternative CCS case D is greater than the base simulation by approximately 2,000 days and 70 m, respectively. The difference between case D for the alternative CCS and the base simulation is a result of the increased area of vertical movement and concentration of seepage in the eastern end of the discharge portion of the alternative CCS.

Conclusions

This paper presents a first assessment of the aquifer salinization processes that occur beneath an engineered, hypersaline cooling canal system (CCS). The analysis is based on numerical simulations of coupled variable-density groundwater flow, solute transport, and heat transport. A simplified two-dimensional cross-section model was developed using geometric characteristics and

general features of the CCS at the Turkey Point power plant in south Florida, USA.

All simulated scenarios were shown to exhibit dense fingering instabilities with fingers developing in response to advective and dispersive components related to GHB fluxes and specified CCS TDS concentrations and temperatures, respectively. For all of the conditions tested, aquifer salinization initially occurs from the formation of dense, hypersaline fingers that descend downward from the base of the CCS to the bottom of the 30-m thick aquifer. Rates of finger convection are highly controlled by the vertical hydraulic properties of the aquifer and by the density contrast between CCS water and groundwater. Fingers reach the aquifer bottom within a few days for the highest hydraulic conductivity case and not for more than 5 years for the lowest hydraulic conductivity case. Aquifer salinization continues after the fingers reach the aquifer bottom as the saline plume spreads seaward beneath the adjacent estuary and landward. For most cases evaluated, aquifer salt content did not reach equilibrium within the 25-year simulation period nor did the position of the freshwater/saltwater interface at the base of the aquifer. In general, CCS salinity had a large effect on aquifer salinization. Larger TDS concentrations naturally result in larger aquifer salinization rates because of the concentration values themselves; but they also result in increased salinization rates and extent of salinization because of the larger density contrast.

The formation of saline finger plumes is enhanced by the alternating canal and berm configuration of the CCS. When this geometry is explicitly included in the simulation, as it was for the base case simulations, fingers develop beneath each cooling canal. Simmons et al. (2001) noted a similar control on fingering in a simulation with alternating vertical zones of low and high hydraulic conductivity. That simulation showed a finger forming within each high conductivity zone.

Results of the simulations indicate that temperature has a mitigating effect on aquifer salinization by reducing the density contrast between the CCS and the aquifer. Isothermal simulations show a 4–10% increase in total aquifer salt content at the end of the 25-year simulation period when compared to equivalent simulations with temperature effects included. The extent of saltwater intrusion is also greater for isothermal simulations. Simulation results also indicate that thermal plumes are generally constrained to the horizontal extent of the CCS, suggesting that thermal conduction within the aquifer is an effective mechanism for dissipating thermal plumes. These results suggest that cooling system evaluations may require full solute and thermal evaluations for accurate impact assessment.

The large variation in aquifer salinization rates and extent for the different hydraulic conductivity configurations indicate that additional data is required before a formal assessment can be made on the effects of the CCS at Turkey Point on the Biscayne aquifer. Simulation results from the high hydraulic conductivity cases indicate the CCS could be having a large effect on the coastal

aquifer and that saltwater intrusion may threaten coastal water resources. Conversely, simulations with the low hydraulic conductivity configuration suggest that aquifer salinization is restricted to the immediate vicinity of the CCS and that saltwater intrusion caused by the CCS is limited and not of immediate concern. Future data collection strategies focused on characterizing the current horizontal and vertical extent of saline and thermal plumes at the site and on the aquifer hydraulic properties would help address these issues. For example, recent investigations of the Biscayne aquifer (Cunningham et al. 2009; Renken et al. 2008; Shapiro et al. 2008) demonstrate that relatively thin zones of enhanced porosity are the primary mechanism for lateral solute transport; these and other potentially confounding factors were not investigated here, but would need to be addressed in future work. Furthermore, even though simulated seepage from the CCS is less than maximum plant discharge rates, development of water and salt budgets for the CCS would better constrain aquifer hydraulic properties and aquifer impacts. This information could then be used to help construct and calibrate a three-dimensional transient model of flow and transport that could be used to make a formal assessment and prediction of the impacts of the Turkey Points CCS on groundwater conditions. This three-dimensional representation would also yield a more accurate picture of TDS and thermal transport in regards to instabilities and fingering as two-dimensional models have known limitations in fully representing these important phenomena (Liu and Dane 1997). A formal stability analysis of the CCS system could be used to evaluate the effect of CCS and aquifer parameters on finger plume development and vertical mass transfer rates; results of a stability analysis could be used to further focus data collection activities at the site.

Acknowledgments The authors would like to thank J. D. Decker (US Geological Survey), R. Renken (US Geological Survey), and V. Walsh (Miami Dade Water and Sewer Department) for reviewing an earlier version of the manuscript. Reviewers for Hydrogeology Journal (E. Abarca, W. E. Sanford, and two anonymous reviewers) provided excellent suggestions that greatly improved the manuscript.

References

- Chen F, Chen CF (1993) Double diffusive fingering convection in a porous medium. *Int J Heat Mass Transfer* 36(3):793–807
- Cunningham KJ, Wacker MA, Robinson E, Dixon JF, Wingard GL (2006) A cyclostratigraphic and borehole geophysical approach to development of a three dimensional conceptual hydrogeologic model of the karst Biscayne aquifer, southeastern Florida. *US Geol Surv Sci Invest Rep* 2005 5235
- Cunningham KJ, Sukop MC, Huang H, Alvarez PF, Curran HA, Renken RA, Dixon JF (2009) Prominence of ichnologically influenced macroporosity in the karst Biscayne aquifer: stratiform “super K” zones. *Geol Soc Am Bull* 121(1–2):164–180
- Dames, Moore (1989) Annual report, August 1989, ground water monitoring program, Turkey Point, Florida, Florida Power and Light Company. Job no. 04598 145 40, Florida Power and Light, Boca Raton, FL
- Dausman AM, Langevin CD, Thorne DT Jr., Sukop MC (2009) Application of SEAWAT to select variable density and viscosity problems. *US Geol Surv Sci Invest Rep* 2009 5028
- Diersch HJG, Kolditz O (1998) Coupled groundwater flow and transport: 2, thermohaline and 3D convection systems. *Adv Water Resour* 21:401–425. doi:10.1016/S0309-1708(97)00003-1
- Fan Y, Duffy CJ, Oliver DS (1997) Density driven groundwater flow in closed desert basins: field investigation and numerical experiments. *J Hydrol* 196:139–184
- Fish JE (1988) Hydrogeology, aquifer characteristics, and ground water flow of the surficial aquifer system, Broward County, Florida. *US Geol Surv Water Resour Invest Rep* 87 4034
- Fish JE, Stewart M (1991) Hydrogeology of the surficial aquifer system, Dade County, Florida. *US Geol Surv Sci Invest Rep* 90 4108
- Florida Power and Light (2000) Applicants environmental report: operating license renewal stage Turkey Point units 3 & 4. Florida Power and Light Company Docket Nos. 50 250 and 50 251 revision 1, Florida Power and Light, Boca Raton, FL. http://www.nrc.gov/reactors/operating/licensing/renewal/applications/turkey_point/er.pdf. Cited 28 November 2008
- Gaby R, McMahon MP, Mazzotti FJ, Gillies WN, Wilcox JR (1985) Ecology of a population of *Crocodylus acutus* at a power plant site in Florida. *J Herpetol* 19(2):189–198
- German ER (2000) Regional Evaluation of Evapotranspiration in the Everglades. *US Geol Surv Sci Invest Rep* 00 4217
- Guo W, Langevin CD (2002) User's guide to SEAWAT: a computer program for simulation of three dimensional variable density ground water flow. *US Geol Surv Tech Water Resour Invest book 6, chap. A7*, US Geological Survey, Reston, VA
- Griffiths RW (1981) Layered double diffusive convection in porous media. *J Fluid Mech* 102:221–248
- Harbaugh AW, Banta ER, Hill MC, McDonald MG, (2000) MODFLOW 2000, the U.S. Geological Survey modular ground water model: user guide to modularization concepts and the ground water flow process. *US Geol Surv Open File Rep* 00 92
- Holzbecher E (2005) Groundwater flow pattern in the vicinity of a salt lake. *Hydrobiologica* 532:233–242
- King CW, Holman AS, Webber ME (2008) Thirst for energy. *Nat Geosci* 1(5):283–286. doi:10.1038/ngeo195
- Langevin CD (2001) Simulation of ground water discharge to Biscayne Bay, Southeastern Florida. *US Geol Surv Water Resour Invest Rep* 00 4251
- Langevin CD (2003) Simulation of submarine ground water discharge to a marine estuary: Biscayne Bay, Florida. *Ground Water* 41(6):758–771
- Langevin CD, Guo W (2006) MODFLOW/MT3DMS based simulation of variable density ground water flow and transport. *Ground Water* 44(3):339–351
- Langevin CD, Shoemaker WB, Guo W (2003) MODFLOW 2000, the US Geological Survey modular ground water model: documentation of the SEAWAT 2000 version with the variable density flow process (VDF) and the integrated MT3DMS transport process (IMT). *US Geol Surv Open File Rep* 03 426
- Langevin CD, Thorne DT, Dausman AM, Sukop MC, Guo W (2007) SEAWAT Version 4: a computer program for simulation of multi species solute and heat transport. *US Geol Surv Tech Methods, book 6, chap. A22*, US Geological Survey, Reston, VA
- Langevin CD, Dausman AM, Sukop MC (2009) Solute and heat transport model of the Henry and Hilleke laboratory experiment. *Ground Water*. doi:10.1111/j.1745-6584.2009.00596.x
- Liu HH, Dane JH (1997) A numerical study on gravitational instabilities of dense aqueous phase plumes in three dimensional porous media. *J Hydrol* 194:126–142
- Lyerly RL (1998) Thermal performance of the Turkey Point cooling canal system in 1998. Report prepared for Florida Power and Light, Miami, FL
- Menand T, Woods AW (2005) Dispersion, scale, and time dependence of mixing zones under gravitationally stable and unstable displacements in porous media. *Water Resour Res* 41, W05014. doi:10.1029/2004WR003701

- Nield DA (1968) Onset of thermohaline convection in a porous medium. *Water Resour Res* 4:553–560
- Nield DA, Simmons CT, Kuznetsov AV, Ward JD (2008) On the evolution of salt lakes: episodic convection beneath an evaporating salt lake. *Water Resour Res* 44, W02439. doi:10.1029/2007WR006161
- Noble CV, Drew RW, Slabaugh JD (1996) Soil survey of Dade County area, Florida. Natural Resources Conservation Service, USDA, Washington, DC
- Oldenburg CM, Pruess K (1998) Layered thermohaline convection in hypersaline geothermal systems. *Transp Porous Media* 33:29–63
- Oostrom M, Hayworth JS, Dane JH, Güven O (1992) Behavior of dense aqueous phase leachate plumes in homogeneous porous media. *Water Resour Res* 28(8):2123–2134
- Post VEA, Kooi H (2003) Rates of salinization by free convection in high permeability sediments: insights from numerical modeling and application to the Dutch coastal area. *Hydrogeol J* 11:549–559. doi:10.1007/s10040-0030927107
- Reese RS, Cunningham KJ (2000) Hydrogeology of the Gray Limestone Aquifer in southern Florida. US Geol Surv Sci Invest Rep 99-4213
- Renken RA, Cunningham KJ, Shapiro AM, Harvey RW, Zygnerski MR, Metge DW, Wacker MA (2008) Pathogen and chemical transport in the karst limestone of the Biscayne aquifer: 1, revised conceptualization of groundwater flow. *Water Resour Res* 44(8), W08429. doi:10.1029/2007WR006058
- Rubin H (1982) Thermohaline convection in a nonhomogeneous aquifer. *J Hydrol* 57(3–4):307–320. doi:10.1016/0022-1694(82)90153-6
- Rubin H, Roth C (1979) On the growth of instabilities in groundwater due to temperature and salinity gradients. *Adv Water Resour* 2:69–76. doi:10.1016/0309-1708(79)90013-7
- Rubin H, Roth C (1983) Thermohaline convection in flowing groundwater. *Adv Water Resour* 6:146–156. doi:10.1016/0309-1708(83)90027-1
- Sanford WE, Wood WW (2001) Hydrology of coastal sabkhas of Abu Dhabi, United Arab Emirates. *Hydrogeol J* 9:358–366
- Schincariol RA, Schwartz FW (1990) An experimental investigation of variable density flow and mixing in homogeneous and heterogeneous media. *Water Resour Res* 26(10):2317–2329
- Shapiro AM, Renken RA, Harvey RW, Zygnerski MR, Metge DW (2008) Pathogen and chemical transport in the karst limestone of the Biscayne aquifer: 2, chemical retention from diffusion and slow advection. *Water Resour Res* 44(8), W08430. doi:10.1029/2007WR006059
- Shoemaker WB, Cunningham KJ, Kuniansky EL, Dixon J (2008) Effects of turbulence on hydraulic heads and parameter sensitivities in preferential groundwater flow layers. *Water Resour Res* 44, W03501. doi:10.1029/2007WR006601
- Simmons CT, Narayan KA, Wooding RA (1999) On a test case for density dependent groundwater flow and solute transport models: the salt lake problem. *Water Resour Res* 35:3607–3620
- Simmons CT, Fenstemaker TR, Sharp JM (2001) Variable density groundwater flow and solute transport in heterogeneous porous media: approaches, resolutions and future challenges. *J Contam Hydrol* 52:245–275
- US Department of Energy (2000) Year 2000 annual steam electric plant operation and design data. Department of Energy Form EIA 767 data file, USDOE, Washington, DC. <http://www.eia.doe.gov/cneaf/electricity/page/eia767hist.html>. Cited 25 November 2008
- US Department of Energy (2005) Year 2005 annual steam electric plant operation and design data. Department of Energy Form EIA 767 data file, USDOE, Washington, DC. <http://www.eia.doe.gov/cneaf/electricity/page/eia767.html>. Cited 25 November 2008
- US Nuclear Regulatory Commission (2002) Generic environmental impact statement for license renewal of nuclear plants, Turkey Point Plant, Units 3 and 4. NUREG 1437, supplement 5, US Nuclear Regulatory Commission, Washington, DC. http://www.nrc.gov/reading_rm/doc_collections/nuregs/staff/sr1437/supplement5/index.html. Cited 25 November 2008
- Yang X, Dziegielewska B (2007) Water use by thermoelectric power plants in the United States. *J Am Water Resour Assoc* 43(1):160–169. doi:10.1111/j.1752-1688.2007.00013.x
- Yechieli Y, Wood WW (2002) Hydrogeologic processes in saline systems: playas, sabkhas, and saline lakes. *Earth Sci Rev* 58:343–365
- Zheng C, Wang PP (1999) MT3DMS, a modular three dimensional multispecies model for simulation of advection, dispersion and chemical reactions of contaminants in groundwater systems: documentation and User's Guide. US Army Engineer Research and Development Center Contract Report SERDP 99-1. USAERDC, Vicksburg, MI

EXHIBIT NO. 74

DOCKET NO: 20170007-EI

WITNESS: SOLE

PARTY: FPL

DESCRIPTION: Order No. PSC-09-0759-FOF-EI

DOCUMENTS:

PROFFERED BY: Office of Public Counsel

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET: 20170007-EI
EXHIBIT NUMBER: 74
PARTY: OPC
DESCRIPTION: Sole/ PSC-09-0759-FOF-Ei

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Environmental cost recovery clause.

DOCKET NO. 090007-EI
ORDER NO. PSC-09-0759-FOF-EI
ISSUED: November 18, 2009

The following Commissioners participated in the disposition of this matter:

MATTHEW M. CARTER II, Chairman
LISA POLAK EDGAR
NANCY ARGENZIANO
NATHAN A. SKOP
DAVID E. KLEMENT

APPEARANCES:

JOHN T. BUTLER and R. WADE LITCHFIELD, ESQUIRES, 700 Universe
Boulevard, Juno Beach, Florida 33408-0420
On behalf of FLORIDA POWER & LIGHT COMPANY (FPL)

R. ALEXANDER GLENN and JOHN T. BURNETT, ESQUIRES, Progress
Energy Service Company, LLC, Post Office Box 14042, St. Petersburg, Florida
33733-4042; GARY V. PERKO, ESQUIRE, Hopping, Green & Sams, P.A.,
P.O. Box 6526, Tallahassee, Florida 32314-6526
On behalf of Progress Energy Florida, Inc. (PEF)

JAMES D. BEASLEY and LEE L. WILLIS, ESQUIRES, Ausley & McMullen,
Post Office Box 391, Tallahassee, Florida 32302
On behalf of Tampa Electric Company (TECO)

JEFFREY A. STONE, RUSSELL A. BADDERS, and STEVEN R. GRIFFIN,
ESQUIRES, Beggs & Lane, Post Office Box 12950, Pensacola, Florida 32591-
2950
On behalf of Gulf Power Company (Gulf)

JON MOYLE, JR, and VICKI GORDON KAUFMAN, ESQUIRES, 118 North
Gadsden Street, Tallahassee, Florida 32312 and JOHN W. McWHIRTER, JR.
P.O. Box 3350, Tampa, Florida
On behalf of the Florida Industrial Power Users Group (FIPUG)

PATRICIA A. CHRISTENSEN, JOSEPH A. MCGLOTHLIN, and J.R.
KELLY, ESQUIRES, Office of Public Counsel, 111 W. Madison St., Room
812, Tallahassee, Florida 32399-1400
On behalf of the Citizens of the State of Florida (OPC)

KAREN S. WHITE, CAPTAIN SHAYLA L. MCNEILL, and CAPTAIN
ALLAN JUNGELS, ESQUIRES, AFCEA/ULT, 139 Barnes Drive, Suite 1,
Tyndall Air Force Base, Florida 32403
On behalf of the Federal Executive Agencies (FEA)

MARTHA CARTER BROWN and ANNA B. WILLIAMS, ESQUIRES, Florida
Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida
32399-0850
On behalf of the FLORIDA PUBLIC SERVICE COMMISSION (Staff)

MARY ANNE HELTON, Acting General Counsel, Florida Public Service
Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850
Advisor to the Florida Public Service Commission.

**FINAL ORDER APPROVING PROJECTED EXPENDITURES AND TRUE-UP
AMOUNTS FOR ENVIRONMENTAL COST RECOVERY FACTORS**

BY THE COMMISSION:

I. BACKGROUND

As part of our ongoing environmental cost recovery proceedings, a hearing was held on November 2, 2009, in this docket. At the hearing, the parties addressed the issues set out in Order No. PSC-09-0720-PHO-EI, the Prehearing Order. Part II of this Order addresses the stipulated generic issues in the case and Part III addresses the stipulated company-specific issues in the case. We have authority pursuant to Section 366.8255, Florida Statutes (F.S.).

II. STIPULATED GENERIC ENVIRONMENTAL COST RECOVERY ISSUES

- A. We approve as reasonable the following final environmental cost recovery true-up amounts for the period ending December 31, 2008:

FPL: \$2,694,222 over-recovery.

PEF: \$4,320,606 under-recovery.

TECO: \$8,112,993 under-recovery.

Gulf: \$1,381,411 over-recovery.

- B. We approve as reasonable the following estimated environmental cost recovery true-up amounts for the period January 2009 through December 2009:

FPL: \$3,602,753 over-recovery.

PEF: \$24,065,931 over-recovery.

TECO: \$9,279,129 under-recovery.

Gulf: \$405,127 over-recovery.

- C. We approve as reasonable the following projected environmental cost recovery amounts for the period January 2010 through December 2010:

FPL: \$174,734,516.

PEF: \$230,703,521.

TECO: \$75,435,869.

Gulf: \$155,938,965.

- D. We approve as reasonable the following environmental cost recovery amounts, including true-up amounts for the period January 2010 through December 2010:

FPL: The total environmental cost recovery amount, adjusted for prior period true-ups and revenue taxes, is \$168,558,816.

PEF: \$211,110,086.

TECO: The total environmental cost recovery amount, including true-up amounts, for the period January 2010 through December 2010 is \$92,894,828 after the adjustment for taxes.

Gulf: Recovery of \$154,152,427 (excluding revenue taxes).

- E. We approve as reasonable the determination that the depreciation rates to be used to develop the depreciation expense included in the total environmental cost recovery amounts for the period January 2010 through December 2010 shall be the depreciation rates that are in effect during the period the allowed capital investment is in service.

F. We approve as reasonable the following jurisdictional separation factors for the projected period January 2010 through December 2010:

FPL: Retail Energy Jurisdictional Factor 99.08384%
 Retail CP Demand Jurisdictional Factor 99.09394%
 Retail GCP Demand Jurisdictional Factor 100.00000%

PEF: The jurisdictional energy separation factor is calculated for each month based on retail kWh sales as a percentage of projected total system kWh sales.

Transmission Average 12 CP demand jurisdictional factor - 68.256%
Distribution Primary demand jurisdictional factor - 99.634%
Jurisdictional Separation Study factors were used for production demand
Jurisdictional factor as Production Base – 91.669%,
Production Intermediate – 59.352%, and Production Peaking – 91.716%.
Production A&G – 87.583%.

TECO: The demand jurisdictional separation factor is 96.39735%. The energy jurisdictional separation factors are calculated for each month based on projected retail kWh sales as a percentage of projected total system kWh sales.

Gulf: The demand jurisdictional separation factor is 96.42160%. The energy jurisdictional separation factors are calculated each month based on retail kWh sales as a percentage of projected total territorial kWh sales.

- G. We approve as reasonable the following environmental cost recovery factors for the period January 2010 through December 2010:

<u>FPL:</u>	<u>Rate Class</u>	<u>Environmental Recovery Factor (\$/kWh)</u>
	RS-1/RST1	0.00179
	GS-1/GST1/WIES1	0.00177
	GSD1/GSDT1/HLFT1 (21-499 kW)	0.00157
	OS2	0.00188
	GSLD1/GSLDT1/CS1/CST1/ HLFT (500-1,999 kW)	0.00153
	GSLD2/GSLDT2/CS2/CST2/ HLFT (2,000 +)	0.00140
	GSLD3/GSLDT3/CS3/CST3	0.00128
	ISST1D	0.00128
	ISST1T	0.00115
	SST1T	0.00115
	SST1D1/SST1D2/SST1D3	0.00128
	CILC D/CILC G	0.00136
	CILC T	0.00125
	MET	0.00171
	OL1/SL1/PL1	0.00070
	SL2/GSCU-1	0.00130

PEF: The appropriate factors are as follows: *

RATE CLASS	ECRC FACTORS 12CP & 50%AD	ECRC FACTORS 12CP & 25%AD	ECRC FACTORS 12CP & 1/13AD
Residential	0.591 cents/kWh	0.592 cents/kWh	0.593 cents/kWh
General Service Non-Demand			
@ Secondary Voltage	0.584 cents/kWh	0.583 cents/kWh	0.583 cents/kWh
@ Primary Voltage	0.578 cents/kWh	0.577 cents/kWh	0.577 cents/kWh
@ Transmission Voltage	0.572 cents/kWh	0.571 cents/kWh	0.571 cents/kWh
General Service 100% Load Factor	0.567 cents/kWh	0.565 cents/kWh	0.564 cents/kWh
General Service Demand			
@ Secondary Voltage	0.573 cents/kWh	0.572 cents/kWh	0.571 cents/kWh
@ Primary Voltage	0.567 cents/kWh	0.566 cents/kWh	0.565 cents/kWh
@ Transmission Voltage	0.562 cents/kWh	0.561 cents/kWh	0.560 cents/kWh
Interruptible & Curtailable			
@ Secondary Voltage	0.555 cents/kWh	0.553 cents/kWh	0.552 cents/kWh
@ Primary Voltage	0.549 cents/kWh	0.547 cents/kWh	0.546 cents/kWh
@ Transmission Voltage	0.544 cents/kWh	0.542 cents/kWh	0.541 cents/kWh
Lighting	0.574 cents/kWh	0.571 cents/kWh	0.569 cents/kWh

* The factors are subject to change pending the resolution of PEF's pending rate case (Docket No. 090079-EI).

TECO:

<u>Rate Class</u>	<u>Factor at Secondary Voltage (¢/kWh)</u>
RS	0.486
GS, TS	0.486
GSD, SBF	
Secondary	0.485
Primary	0.480
Transmission	0.475
IS	
Secondary	0.478
Primary	0.474
Transmission	0.469
LS1	0.484
Average Factor	0.485

Gulf:

See table below:

RATE CLASS	ENVIRONMENTAL COST RECOVERY FACTORS ¢/KWH
RS, RSVP	1.391
GS	1.384
GSD, GSDT, GSTOU	1.372
LP, LPT	1.343
PX, PXT, RTP, SBS	1.322
OS-I/II	1.327
OSIII	1.358

- H. For billing purposes, the new environmental cost recovery factors shall be effective beginning with the first billing cycle for January 2010, and thereafter through the last billing cycle for December 2010. The first billing cycle may start before January 1, 2010, and the last billing cycle may be read after December 31, 2010, so long as each customer is billed for twelve months regardless of when the factors became effective.

III. STIPULATED COMPANY-SPECIFIC ISSUES

Florida Power & Light (FPL)

A. We approve the following stipulation regarding whether FPL's petition for approval of Plant Riviera Manatee Temporary Heating System (MTHS) Project for environmental cost recovery shall be granted:

Yes. The purpose of the MTHS – Riviera Project is to provide a warm water habitat for endangered manatees at FPL's Power Plant Riviera (PRV). It helps FPL remain in compliance with FPL's PRV Manatee Protection Plan (MPP), which is Specific Condition 13 of the Industrial Wastewater Facility (IWWF) Permit Number FL0001546 issued by the Florida Department of Environmental Protection (FDEP) for PRV. The Project also helps the Company to comply with the Conditions of Certification set forth by the Florida Fish and Wildlife Conservation Commission (FWC) for a Modernization Project at PRV.

Historically, a portion of the once-through cooling water discharge from the steam units at PRV has provided a warm water refuge for the manatees in winter. The MPP states “. . . the FPL Riviera power plant shall endeavor to operate in a manner that maintains the water temperature in an adequate portion . . . at or above 68 °F., until such time as the ambient water temperature reaches 61 °F.” FPL plans to undertake a Modernization Project at PRV, which was approved by the Commission in Order No. PSC-08-0591-FOF-EI, issued September 12, 2008, in Docket No. 080245-EI. FPL plans to take the existing conventional steam units at PRV out of service no later than 2011 in order to replace them with a gas-fired combined cycle (CC) unit. Due to FPL's projection of lower electric load demands and lower electricity sales resulting from the current economic slowdown, the Company has decided to place the steam units at PRV into inactive reserve status during 2009 and 2010 until they are dismantled for the Modernization Project. FPL estimated that it could save approximately \$10 million in O&M costs during 2009 and 2010. With the PRV steam units in inactive status, FPL can no longer depend on them to meet the obligation of MPP to provide a warm water refuge for manatees. The units could not be returned to service quickly enough to respond to a sudden cold-weather event that required warming water for the manatees congregated nearby. The MTHS is the proposed alternative quick-response heating source to be put in place in 2009, which will help to avoid potentially adverse impacts from cold weather to manatees congregating in the PRV area during the winters of 2009 through 2014. Additionally, the MTHS is less costly to operate in comparison to operating the steam units out of economic dispatch just for water heating. FPL plans to dismantle and remove the MTHS upon the commercial operation of the CC unit at PRV in 2014. From 2014 onward the CC unit will provide a regular warm-water

source to comply with the MPP. Furthermore, FPL will begin environmental and biological monitoring of the manatee habitat area pursuant to the Conditions of Certification proposed by the FWC and will develop a long-term manatee strategy at PRV. These activities will be included in the proposed MTHS – Riviera Project.

FPL estimated that the total costs for the MTHS – Riviera Project, including the expenses associated with meeting the monitoring for the period 2009 through 2015 and strategy development requirements, is approximately \$5 million. The Company proposed to amortize the MTHS over 56 months from November 2009 through June 2014.

There are specific environmental laws and regulations that require FPL to comply with the MPP at PRV, and thus warrant the implementation of the MTHS – PRV Project: (1) IWWF Permit for PRV issued by the FDEP; (2) Conditions of Certification set forth by the FWC; (3) Marine Mammal Protection Act of 1972 (16 U.S.C. 1361, et. seq.); and (4) Endangered Species Act of 1973 (16 U.S.C. 1531, et. seq.). FPL shall be permitted to recover the costs associated with the MTHS – PRV Project. Such costs meet the requirements of Section 366.8255, F.S., for recovery through the environmental cost recovery clause (ECRC). The Company is not presently recovering the costs of the Project through base rates or any other recovery mechanism, nor has it included the costs in FPL's 2010 test year Minimum Filing requirements.

B. We approve the following stipulation regarding how the costs associated with the MTHS – Riviera Project shall be allocated to the rate classes:

Capital costs for the MTHS- Riviera Project shall be allocated to the rate classes on an average 12 CP demand basis and 1/13th energy basis. Operating and maintenance costs shall be allocated to the rate classes on an energy basis.

C. We approve the following stipulation regarding whether FPL shall be allowed to recover the costs associated with its proposed Manatee Temporary Heating System (MTHS) – Cape Canaveral Plant Project:

Yes. The purpose of the MTHS – Cape Canaveral Project is to provide a warm water habitat for endangered manatees at FPL's Power Plant Cape Canaveral (PCC). It helps FPL remain in compliance with the facility's Manatee Protection Plan (MPP), which is Specific Condition 9 of the IWWF Permit Number FL0001473 issued by the FDEP. The Project also helps the Company comply with the Conditions of Certification set forth by the FWC for a Modernization Project at PCC. FPL plans to undertake the Modernization Project at PCC, which was approved by the Commission in Order No. PSC-08-0591-

FOF-EI, issued September 12, 2008, in Docket No. 080246-EI. FPL plans to take the existing conventional steam units at PCC out of service in 2010 in order to convert them into a combined cycle (CC) unit. The implementation of the proposed MTHS project will provide warm water discharge into the facility's intake canal, which will function as a temporary "manatee refuge," during the period from the decommissioning of the facility in April 2010 until its conversion is complete in June 2013. In addition, pursuant to the Conditions of Certification proposed by the FWC, FPL will begin environmental and biological monitoring of the manatee habitat area, and will develop a long-term manatee strategy at PCC. These activities will be included in the proposed MTHS – Cape Canaveral Project.

The estimate of the capital costs associated with the Project is \$5 million, and the O&M costs, including environmental and biological monitoring and development of the long-term manatee strategy, are expected to be approximately \$1.6 million in total.

There are specific environmental laws and regulations that require FPL to comply with the MPP at PCC, and thus warrant the implementation of the MTHS – PCC Project: (1) IWWF Permit for PCC issued by the FDEP; (2) Conditions of Certification set forth by the FWC; (3) Marine Mammal Protection Act of 1972 (16 U.S.C. 1361, et. seq.); and (4) Endangered Species Act of 1973 (16 U.S.C. 1531, et. seq.). FPL shall be permitted to recover the costs associated with the MTHS – PCC Project. Such costs meet the requirements of Section 366.8255, F.S., for recovery through the ECRC. FPL is not presently recovering the costs of the Project through base rates or any other recovery mechanism, nor has it included the costs in its 2010 test year Minimum Filing Requirements.

D. We approve the following stipulation regarding how the costs associated with the MTHS – Cape Canaveral Project shall be allocated to the rate classes:

Capital costs for the MTHS – Cape Canaveral Project shall be allocated to the rate classes on an average 12 CP demand basis and 1/13th energy basis. Operating and maintenance costs shall be allocated to the rate classes on an energy basis.

E. We approve the following stipulation regarding whether FPL shall be allowed to recover the costs associated with its proposed Turkey Point Cooling Canal Monitoring Plan (TP-CCMP) Project through the ECRC:

Yes. On January 18, 2008, FPL submitted an application for power plant site certification to FDEP under the Florida Electrical Power Plant Siting Act, section 403.501 et. seq., for its TP Uprate Project. The Commission had approved

a determination of need for the project in Order No. PSC-08-0021-FOF-EI, issued January 7, 2008, in Docket No. 070602-EI, In re: Final order granting petition for determination of need for proposed expansion of nuclear power plants. On October 29, 2008, the FDEP Siting Office issued the Conditions of Certification (PA 03-45A2), which include Conditions IX and X. Conditions IX and X require FPL to develop a monitoring plan for the Cooling Canal System (CCS) and its surrounding area. On July 13, 2009, FPL filed its Preliminary List of New Projects to be Submitted for Cost Recovery in which the proposed TP-CCMP Project was included. The purpose of the project is to conduct water, groundwater and water quality monitoring, and ecological monitoring to assess the potential impacts of the CCS. The estimated O&M and capital expenditures for the total project are \$7.2 million and \$2.7 million, respectively. FPL is not presently recovering the costs associated with the TP-CCMP Project through base rates or any other recovery mechanism, nor has it included such costs in FPL's 2010 test year Minimum Filing Requirements.

The TP-CCMP Project is legally required to comply with environmental regulations necessary for site certification for its TP Uprate Project. Thus, the TP-CCMP Project is tied to the Uprate construction requirements of the TP nuclear units. Consequently, it is difficult at first to categorize the expenditures associated with the TP-CCMP Project as environmental compliance costs rather than the TP Uprate Project costs.

The Commission addressed a similar case in Order No. PSC-00-2092-PAA-EI, issued November 3, 2000, in Docket No. 000808, In re: Order granting in part and denying in part petition for cost recovery under the environmental cost recovery clause. There, the Commission denied Gulf Power's petition for approval of ECRC recovery for costs associated with the Smith Unit 3 wetland mitigation plan (Smith Plan), even if the Commission found that the Smith Plan was legally required to comply with a governmentally-imposed environmental regulation. The Commission said:

We find that whether the costs of the Smith Plan may be recovered through the ECRC is a matter of agency discretion and policy. [T]he intent of the clauses is to address costs that may fluctuate or increase significantly and unpredictably from year to year. . . . Construction of a new plant can not be characterized as an unpredictable event. . . . [M]uch of the planning process is under the control of the utility . . . Thus the rationale behind the clauses does not apply in the case of planned construction of a new power plant. . . . Approval of Gulf's petition would set a precedent for recovery, through the ECRC, of a class of expenses that is quite large. Because many of the components of a new plant must meet environmental requirements, a substantial percentage of the cost of a new plant could be recovered through the ECRC. . . .

Furthermore, some environmental requirements are inextricably bound with construction requirements, which makes it very difficult, if not impossible, to distinguish between environmental compliance costs and construction costs.

Order No. PSC-00-02092-PAA-EI, pages 5-6.

FPL has been conducting certain monitoring activities at the TP Plant for some time, and FPL indicates that the DEP and water management district have been concerned with adverse environmental impacts from the CCS beyond the specific impacts that may result from the nuclear uprate. The costs associated with these current monitoring efforts are being recovered through FPL's current base rates. With respect to the proposed TP-CCMP project, the company has testified in its Estimated/Actual True-up filing that:

These activities will be incremental to FPL's current monitoring efforts. . . . The CCM Plan has been designed to focus on the objectives as they relate to the cooling canal system and the Uprate Project and those resources that may be affected adjacent to the cooling system. . . . [R]eports will be submitted every six months during the pre Uprate period and initially during the post Uprate period. . . . The potential additional measures that might be required include . . . the development and application of a 3-dimensional coupled surface and groundwater model to further assess impacts of the Uprate Project on ground and surface waters . . . [and] mitigation measures to offset such impacts of the Uprate Project necessary to comply with State and local water quality standards . . .

LaBauve testimony filed August 3, 2009, pages 8, 9, 12, 13.

The Commission has established the Nuclear Cost Recovery Clause (NCRC), pursuant to Section 366.93, F.S., to address the need of investor-owned electric utilities to recover certain costs associated with building a nuclear power plant, including construction of a new unit and uprate of an existing one. On March 3, 2008, FPL filed a petition seeking prudence review and recovery of costs through the NCRC for uprate activities at its existing nuclear generating plants, TP Units 3 and 4 and St. Lucie Units 1 and 2. Since the TP-CCMP Project serves as a prerequisite to the TP Nuclear Uprate, the costs associated with this Project could be treated in the NCRC. However, the NCRC has specific implementation policies pursuant to Rule 25-6.0423, F.A.C., and Section 366.93 (4), F.S. Should the TP-CCMP Project be treated through the NCRC, its cost recovery ultimately would be moved into base rates together with the recovery of the revenue requirements associated with the TP Uprate Project after the Uprate is completed and placed into commercial service in 2012. In light of these

implementation policies, the following facts should be considered: (a) the major portion of the costs associated with the TP-CCMP Project is O&M expenditures; (b) the Company has projected O&M expenditures until 2015; and (c) it is uncertain at this point when the incremental O&M activities of the Project will cease due to the nature of the project scope, which includes further assessment of the impacts of the Uprate Project and the implementation of mitigation measures to offset such impacts. It is not necessary to move substantial amounts of O&M costs into base rates since it is uncertain when such incremental O&M costs will cease being incurred.

Because the costs for the TP-CCMP Project are predominantly O&M expenses that will continue for an uncertain duration, and because the water-quality issues the Project is being undertaken to address relate to operation of the Turkey Point plant as a whole and not just the TP Nuclear Uprate, FPL should be allowed to recover the costs associated with the TP-CCMP Project through the ECRC. The eligibility of ECRC recovery for any similar project will depend on individual circumstances and shall, therefore, be considered on a case-by-case basis.

F. We approve the following stipulation regarding how the costs associated with the TP-CCMP Project shall be allocated to the rate classes:

Capital costs for the TP-CCMP Project shall be allocated to the rate classes on an average 12 CP demand and 1/13th energy basis. O&M costs shall be allocated on an energy basis.

G. We approve the following stipulation regarding whether FPL shall be allowed to recover the costs associated with its proposed NESHAP Information Collection Request Project through the ECRC:

Yes. The U.S. Environmental Protection Agency (EPA) intends to review the National Emission Standard for Hazardous Air Pollutants (NESHAP) for coal-fired and oil-fired electric utility steam generating units. The EPA published its Proposed Information Collection Request (ICR) in the Federal Register on July 2, 2009, for the collection of the emissions and fuel data. FPL anticipates that the final ICR will be published by December 2009. The Company has indicated that once the final ICR is published, affected sources must complete data collection and testing requirements within six months of the Federal Register publish date. Such information collection is mandatory under Clean Air Act Section 114 (42 U.S.C. 7414).

The proposed NESHAP-ICR Project is for complying with the EPA data collection and testing requirements for FPL's facilities that have been identified in

the EPA proposal, including 17 oil-fired units and 3 coal-fired units. FPL believes that it must begin its plan to respond to a final ICR due to the near certainty that the ICR will be issued, the short time frame in which the Company would be required to respond, and the limited availability of contractors that will be needed for the emission testing and fuel analyses. Relying upon the EPA estimates from the ICR Statement of Burden – Part B for those activities which FPL anticipates to be performed by outside firms, the Company has projected approximately \$3.3 million in O&M costs in 2010 for contractor and professional services required by the project. Costs for activities identified in the ICR which FPL expects to be completed using in-house resources have not been included in the 2010 cost projection. FPL does not plan to recover these costs through the ECRC. Costs associated with similar activities required to comply with existing state and federal regulations are also not included in the cost projections for this Project.

Subject to the adjustments per the EPA's final ICR requirements, FPL shall be permitted to recover the prudently incurred costs of the NESHAP-ICR Project. The costs of the Project meet the requirements of Section 366.8255, F.S., for recovery through the ECRC. FPL is not presently recovering NESHAP-ICR Project costs through base rates or any other recovery mechanism, nor has it included such costs in FPL's 2010 test year Minimum Filing Requirements.

H. We approve the following stipulation regarding how the costs associated with the NESHAP Information Collection Request Project shall be allocated to the rate classes:

Capital costs for the NESHAP Information Collection Request Project, if any, shall be allocated to the rate classes on an average 12 CP demand and 1/13th energy basis. Operating and maintenance costs shall be allocated to the rate classes on an energy basis.

I. We approve the following stipulation regarding the reasonable environmental cost recovery amounts for FPL's three Next Generation Solar Energy Centers for the final true-up period January 2008 through December 2008:

The Commission granted FPL's petition for approval of the eligibility of three Next Generation Solar Energy Centers for recovery through the ECRC in Order No. PSC-08-0491-PAA-EI, issued August 4, 2008, in Docket No. 080281-EI, In re: Petition for approval of Solar Energy Projects for Recovery through Environmental Cost Recovery Clause, by Florida Power & Light Company. Per Commission review and audit, the total amount of recoverable costs of the three Next Generation Solar Energy Centers is \$78,554 for the final true-up period January 2008 through December 2008.

J. We approve the following stipulation regarding whether we should approve FPL's updated Clean Air Interstate Rule, Clean Air Mercury Rule and Clean Air Visibility Rule Compliance Projects that are reflected in FPL's April 1, 2009, supplemental filing as reasonable and prudent:

Yes. FPL's updated CAIR, CAMR and CAVR compliance plans that are reflected in FPL's April 1, 2009, supplemental filing appear to represent the most cost-effective alternatives at this time for achieving and maintaining compliance with the environmental rules and regulatory requirements for air quality control and monitoring.

In December 2008, the US Circuit Court of Appeals for the District of Columbia Circuit (the Court) remanded the CAIR to the EPA without vacatur, thereby leaving CAIR compliance requirements in place while the EPA develops a revised rule. FPL is thus obligated to comply with the current CAIR requirements, beginning in 2009, until the rule is revised. In line with FPL's CAIR compliance plan, the Selective Catalytic Reduction Systems (SCRs) have been placed into service at St. Johns River Park Units 1 and 2. Installation of a Scrubber and an SCR for Plant Scherer Unit 4 will be completed in 2012. The 800 MW Cycling Project for Manatee Units 1 and 2 and Martin Units 1 and 2 is currently providing annual and ozone season reductions in NO_x emissions that are needed to comply with the CAIR. The Low Mass Emitting Continuous Emissions Monitoring Systems are in operation at the Fort Myers, Port Everglades and Fort Lauderdale Gas Turbine Parks.

In February 2008, the Court vacated the CAMR regulation, eliminating CAMR mercury emission control obligations and monitoring requirements. The Court also rejected the EPA's delisting of coal-fired Electric Generating Units (EGUs) from the list of emission sources that are subject to Section 112 of the Clean Air Act. In lieu of CAMR, the EPA must define Maximum Available Control Technology (MACT) for control of Hg emissions on coal-fired EGUs. FPL is in the process of installing Hg controls on Scherer Unit 4 in order to comply with the Georgia Multi-pollutant Rule, for which FPL has an obligation to comply at Plant Scherer. FPL believes that these controls will meet any subsequent MACT requirements adopted by the EPA. For the SJRPP units, the Hg emission reductions will be achieved through the co-benefits from the operation of the SCRs that are being installed to comply with CAIR. No separate Hg emission controls have been planned at this time.

With regard to the CAVR compliance, in February 2009, FPL successfully concluded negotiations with the FDEP regarding its TP Units 1 and 2 retrofit measures.

FPL shall file, as part of its annual ECRC final true-up testimony, a review of the efficacy of its CAIR/CAMR/CAVR compliance plans, as well as the cost-effectiveness of its retrofit options for each generating unit in relation to expected changes in environmental regulations and ongoing state and federal CAIR legal challenges. The reasonableness and prudence of individual expenditures, and FPL's decisions on the future compliance plans made in light of subsequent developments, shall continue to be subject to the Commission's review in future proceedings on these matters.

K. We approve the following stipulation regarding whether FPL shall be allowed to recover the increased costs associated with the St. Lucie Cooling Water System Inspection and Maintenance Project:

Yes. The Commission granted permission to allow FPL to recover costs associated with the St. Lucie Cooling Water System Inspection and Management Project in Order No. PSC-07-0992-FOF-EI, issued November 16, 2007, in Docket No. 07007-EI, In re: Environmental Cost Recovery Clause. The purpose of the Project is to inspect and, as necessary, maintain the cooling water system at FPL's St. Lucie nuclear plant so that it minimizes injuries and/or deaths of endangered species. The Project helps FPL remain in compliance with the federal Endangered Species Act, 16 U.S.C. Section 1531, et seq. (ESA). The original cost estimate for the inspection and cleaning and debris removal was approximately \$3 million to \$6 million. In FPL's 2010 Projection filing, the Company significantly increased its estimate of the total project costs, to over \$21 million, including \$4.2 million of expenditures for the period January 2010 to December 2010, due to the change in the scope of the Project.

FPL completed the inspection of the intake pipes and the velocity caps of the cooling system in 2007. The results provide details for what additional work will be needed to clean and remove or minimize debris or structural obstructions. The major change to the required scope of the Project, and thus the total costs associated with the Project, relates to the decision made by the National Marine Fisheries Services (NMFS), pursuant to section 7 of the ESA, to require FPL to install exclusion devices at the velocity cap (VC) openings in order to prevent large organisms such as adult sea turtles from entering the intake pipes. The Company will have to correct the inconsistencies in the size and shape of the windows in the VC structures identified during the 2007 inspection to avoid purchasing customized exclusion devices. FPL will need to manually clean and remove any debris or structural obstructions and physically cut out large sections of concrete and other protrusions with professional divers.

FPL shall be allowed to recover the increased costs associated with its St. Lucie Cooling Water System Inspection and Management Project so that the Company may remain in compliance with the ESA and the NMFS's request. FPL

shall perform due diligence over the life of the Project to minimize the costs. The recovery of the project costs through the ECRC is subject to Commission review and audit to ensure such costs are prudent and not otherwise recovered in base rates or any other cost recovery mechanism.

Progress Energy Florida (PEF)

A. We approve the following stipulation regarding whether we should grant PEF's petition for approval of cost recovery for the Total Maximum Daily Loads Hg Emissions (TMDLs-Hg emissions) Program:

Yes. Section 303(d) of the federal Clean Water Act requires each state to identify state waters not meeting water quality standards and establish a Total Maximum Daily Loads (TMDLs) for the pollutant or pollutants causing the failure to meet standards. Under a 1999 federal consent decree, TMDLs for over 100 Florida water bodies listed as impaired for mercury (Hg) must be established by September 12, 2012. The Florida Department of Environmental Protection (FDEP) has initiated a research program to provide the necessary information for setting the appropriate TMDLs for Hg. It will assess the relative contributions of Hg-emitting sources, such as coal-fired power plants, to Hg levels in surface waters. FDEP could seek to use the information to attempt to impose new regulatory requirements on Hg-emitting sources. Additionally, FDEP is in the process of developing rules to regulate Hg emissions from various sources and has invited stakeholders to participate in the design and completion of the Hg TMDLs study.

Pursuant to the FDEP's invitation, PEF is participating in the Hg TMDLs study and in the parallel air rulemaking proceedings through its membership in the Florida Electric Power Coordinating Group's Environmental Committee (FCG). The FCG is contracting with various consultants to participate in the monitoring and modeling of Hg emissions and their fate in the environment to ensure that the ongoing regulatory efforts are based on good science and that the relative contributions of Hg-emissions from the power plants are appropriately analyzed so that future environmental compliance costs are minimized. On March 4, 2009, the Company filed a petition for approval of its participation in environmental studies related to the FDEP's development of TMDLs for Hg in State waters and rules regulating Hg emissions from various sources including, potentially, coal-fired power plants. The estimate of the total costs for PEF to participate in the proposed activities is approximately \$166,000 for the period 2009 through 2011. The Company has asserted that the costs are not recovered in base rates or any other cost recovery mechanism, nor are they included in PEF's 2010 test year Minimum Filing Requirements.

The Commission recognized in Order No. PSC-08-0775-FOF-EI, issued November 24, 2008, in Docket No. 080007-EI, In re: Environmental Cost Recovery Clause, that utilities are expected to take steps to control the level of costs that must be incurred for environmental compliance. An effective way to control the costs for complying with a particular environmental law or regulation can be participation in the regulatory and legal processes involved in defining compliance. PEF shall be permitted to recover the costs associated with the TMDLs-Hg Emissions Program. Such costs meet the requirements of Section 366.8255, F.S., for recovery through the ECRC.

B. We approve the following stipulation regarding how the costs associated with the TMDLs-Hg Emissions Program shall be allocated to the rate classes:

Operating and maintenance costs for the TMDLs-Hg Emissions Program shall be allocated to the rate classes on an energy basis.

C. We approve the following stipulation regarding whether we should approve PEF's 2009 Review of Integrated Clean Air Compliance Plan as reasonable and prudent:

Yes. On April 1, 2009, PEF filed its Review of Integrated Clean Air Compliance Plan. Based on significant project milestones achieved to date, PEF remains confident that its plan will have the desired effect of achieving timely compliance with the applicable regulations in a cost-effective manner. No new or revised environmental regulations have been adopted that have a direct bearing on PEF's compliance plan. Although the Environmental Protection Agency (EPA) is proceeding with the adoption of new standards for utility hazardous air pollutant emissions as a result of a federal court decision vacating the CAMR rules, this development does not immediately impact PEF's implementation of its compliance plan because the plan relies primarily on installation of NO_x and SO₂ controls to reduce Hg emissions and does not contemplate installation of Hg-specific controls until 2017. It appears that PEF's plan remains the most cost-effective alternative for achieving and maintaining compliance with the applicable air quality control and monitoring regulatory requirements. PEF shall file, as part of its true-up testimony in the ECRC, a yearly review of the efficacy of its plan and the cost-effectiveness of PEF's retrofit options for each generating unit in relation to expected changes in environmental regulations.

D. We approve the following stipulation regarding how the capital and O&M costs associated with Project 7 shall be allocated to the rate classes:

Project 7 capital and O&M costs shall be allocated to the retail rate classes on an energy basis as opposed to a production demand basis. This is consistent

with Order No. PSC-94-0044-FOF-EI, in which the Commission ordered that costs associated with compliance with the Clean Air Act Amendments of 1990 (CAAA) be allocated to the rate classes in the ECRC on an energy basis due to the strong nexus between the level of emissions which the CAAA seeks to reduce and the number of kilowatt hours generated. This is also consistent with the stipulation approved for TECO regarding air pollution control-related costs in Order PSC-04-1187-FOF-EI, in Docket No. 040007-EI.

Gulf Power Company (Gulf)

A. We approve the following stipulation regarding whether Gulf shall be allowed to recover the costs associated with its proposed Plant Smith Reclaimed Water Project:

Yes. This project is the additional part of Gulf's Plant Smith Water Conservation and Consumptive Program. The Commission approved the Program for cost recovery in Order No. PSC-01-1788-PAA-EI, issued September 4, 2001, in Docket No. 010562-EI, In re: Petition for approval of Consumptive Use-Shield Water Substitution Project as new program for cost recovery through Environmental Cost Recovery Clause by Gulf Power Company. Due to the increase in costs relative to the original program, the Company included this addition in Gulf's Preliminary List of New Projects filed in Docket No. 090007-EI. Gulf's estimated capital expenditures for the Project are approximately \$1.5 million for the period January 2010 through December 2010. The total cost associated with the Project is estimated to be between \$20 and \$30 million. Specific Condition Nine of the Northwest Florida Water Management District (NFWMD) Individual Water Use Permit Number 19850073 (Permit), issued November 30, 2006, requires Gulf's Plant Smith in Bay County to implement measures to increase water conservation and efficiency at the facility. Gulf is investigating the feasibility of utilizing reclaimed water at the Smith Plant in order to increase groundwater and surface water conservation as required in the Permit. If the Company determines that it is feasible, the proposed Project will move forward. On October 20, 2008, the NFWMD issued a letter stating that re-use of reclaimed water clearly meets the requirement listed in Specific Condition Nine in the Permit. Gulf has begun initial discussions with potential reclaimed water suppliers in the Bay County area. The Project would ultimately include the necessary engineering and infrastructure for the Company to connect to local reclaimed water source(s). Gulf shall be allowed to recover prudently incurred costs associated with the Plant Smith Reclaimed Water Project. Such costs meet the requirements of Section 366.8255, F.S., for recovery through the ECRC. The Company is not presently recovering the costs of the Project through base rates or any other recovery mechanism.

B. We approve the following stipulation regarding how the costs associated with the Plant Smith Reclaimed Water Project shall be allocated to the rate classes:

Capital costs for the Plant Smith Reclaimed Water Project shall be allocated to the rate classes on an average 12CP demand basis and 1/13th energy basis.

C. We approve the following stipulation regarding whether Gulf shall be allowed to recover the costs associated with its proposed Plant Crist Unit 6 Precipitator Project:

Yes. The Plant Crist Unit 6 Precipitator is part of a previously approved ECRC program required to comply with the Clean Air Act Amendments of 1990. The program was approved for cost recovery in Order No. PSC-94-0044-FOF-EI, issued January 12, 1994, in Docket No. 930613-EI, In re: Order Regarding Gulf Power Company's Petition for Environmental Compliance Cost Recovery. Gulf's recent inspections of the Plant Crist Unit 6 precipitator have indicated that the internals of the precipitator will need to be replaced by 2013. The Company expects to begin preliminary engineering and design in 2010. The 2010 projected expenditures for the Project are approximately \$1.1 million. Gulf shall be allowed to recover prudently incurred costs associated with the Plant Crist Unit 6 Precipitator Project. Such costs meet the requirements of Section 366.8255, F.S., for recovery through the ECRC. The Company is not presently recovering the costs of the Project through base rates or any other recovery mechanism.

D. We approve the following stipulation regarding how the costs associated with the Plant Crist Unit 6 Precipitator Project shall be allocated to the rate classes:

Capital Costs for the Plant Crist Unit 6 Precipitator Project shall be allocated to the rate classes on a 100% energy basis.

E. We approve the following stipulation regarding whether we should approve Gulf's Environmental Compliance Program Update for the Clean Air Interstate Rule and Clean Air Visibility Rule as reasonable and prudent:

Yes. On April 1, 2009, Gulf filed its Environmental Compliance Program Update to address the Company's ongoing pollutants emission control projects and its reasons for continuing these projects. In this Update, Gulf has identified the timing and current estimates of costs for specific projects planned by the Company in order to comply with the CAIR, CAVR, CAMR, and the requirements of the Florida Department of Environmental Protection and the Mississippi Department of Environmental Quality, along with information regarding the relative value of the planned projects compared to other viable

compliance alternatives. The Update included a description of the evaluation process used and the results of the process that led Gulf to conclude that the chosen control technology is both cost-effective and that the affected generating units remain economically viable as a source of energy to Gulf's customers with the addition of the controls. Based on the evaluation of various compliance options as well as the combination of these options, Gulf has decided that the purchase of emission allowances in conjunction with the retrofit projects constitutes the most reasonable, cost-effective means for Gulf to meet pollutants emission control requirements. In response to the vacated CAMR ruling, Gulf has removed the affected projects, including the mercury monitor projects at Plant Crist, Plant Daniel, Plant Smith and the ACI project at Plant Daniel, from the Company's compliance schedule and budget projections.

Gulf's Environmental Compliance Program is reasonable and prudent at this time. It represents the most cost-effective alternative for Gulf to assure environmental compliance while preserving flexibility to cope with the inevitable changes and evolutions of the compliance requirements. Gulf shall file, as part of its annual ECRC true-up testimony, an update of the efficacy of its Environmental Compliance Program and the cost-effectiveness of its compliance options for each generating unit in relation to changes in environmental regulations.

F. We approve the following stipulation regarding whether Gulf should be allowed to recover the costs associated with its newly proposed Maximum Achievable Control Technology Information Collection Request (MACT-ICR) Project:

Yes. The U.S. Environmental Protection Agency (EPA) recently proposed an extensive Information Collection Request (ICR) in the Federal Register for coal-fired and oil-fired electric utility steam generating units to support Maximum Achievable Control Technology (MACT) rulemaking under Section 112 of the Clean Air Act. Gulf expects that the EPA will finalize the ICR in January 2010. The proposed ICR requires each of Gulf's facilities to conduct a broad range of emission testing and submit information on control equipment efficiencies, emissions, capital and O&M costs, and fuel data. In order to comply with the EPA data collection and testing requirements, Gulf proposed the MACT-ICR Project. The Company estimated that the O&M expenses associated with the project would be \$541,000 in 2010. Subject to the adjustments per the final ICR requirements, Gulf shall be allowed to recover the prudently incurred costs associated with the MACT-ICR Project. Such costs meet the requirements of Section 366.8255, F.S., for recovery through the ECRC. The Company is not presently recovering the costs of the Project through base rates or any other recovery mechanism.

G. We approve the following stipulation regarding how the costs associated with the MACT-ICR Project shall be allocated to the rate classes:

O&M costs of the MACT-ICR Project shall be allocated on an energy basis.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that the stipulations and findings set forth in the body of this order are hereby approved. It is further

ORDERED that each utility that was a party to this docket shall abide by the stipulations and findings herein which are applicable to it. It is further

ORDERED that the utilities named herein are authorized to collect the environmental cost recovery amounts and use the factors approved herein beginning with the specified environmental cost recovery cycle and thereafter for the period of January 2010 through December 2010. Billing cycles may start before January 1, 2010, and the last cycle may be read after December 31, 2010, so that each customer is billed for 12 months regardless of when the adjustment factor became effective.

By ORDER of the Florida Public Service Commission this 18th day of November, 2009.

/s/ Ann Cole

ANN COLE

Commission Clerk

This is an electronic transmission. A copy of the original signature is available from the Commission's website, www.floridapsc.com, or by faxing a request to the Office of Commission Clerk at 1-850-413-7118.

(S E A L)

ARW

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Office of Commission Clerk, and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.

EXHIBIT NO. 79

DOCKET NO: 20170007

WITNESS: Sole

PARTY: FPL

DESCRIPTION: Testimony & Exhibits of Randall R. Labauve September 2, 2016
Testimony of Terry J. Keith & Randall R. Labauve August 4, 2016

DOCUMENTS:

PROFFERED BY: FPL

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET: 20170007-EI
EXHIBIT NUMBER: 79
PARTY: FPL
DESCRIPTION: Sole/ 9.2.16 and 8.4.16,
8.1.13, 8.3.09, 8.31.15 testimonies of TJ
Keith and Randall R LaBauve

1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
2 FLORIDA POWER & LIGHT COMPANY
3 TESTIMONY OF RANDALL R. LABAUVE
4 DOCKET NO. 160007- EI
5 SEPTEMBER 2, 2016
6

7 **Q. Please state your name and address.**

8 A. My name is Randall R. LaBauve and my business address is 700
9 Universe Boulevard, Juno Beach, Florida 33408.

10 **Q. By whom are you employed and in what capacity?**

11 A. I am employed by NextEra Energy, Inc. ("NEE") as Vice President of
12 Environmental Services.

13 **Q. Have you previously testified before this Commission?**

14 A. Yes.

15 **Q. What is the purpose of your testimony in this proceeding?**

16 A. The purpose of my testimony is to provide a status update for the
17 Turkey Point Cooling Canal Monitoring Plan ("TPCCMP") project,
18 addressing the impact of recent regulatory actions that have taken
19 place since the August 4, 2016 actual/estimated filing on the
20 environmental compliance activities undertaken by FPL pursuant to
21 this project.

22 **Q. Have you prepared, or caused to be prepared under your**
23 **direction, supervision, or control, an exhibit in this proceeding?**

1 A. Yes. I am sponsoring Exhibit RRL-9 – Addendum to October 2015
2 Consent Agreement.

3 Q. Why are you updating the TPCCMP project costs that were
4 included in your direct testimony and exhibits filed on August 4,
5 2016 in this docket?

6 A. At the time of the August 4 filing, it was uncertain whether the consent
7 order (the “CO”) between FPL and the Florida Department of
8 Environmental Protection (“FDEP”), dated June 20, 2016, for the
9 Turkey Point cooling canal system (“CCS”) would be challenged. As a
10 result, FPL took the conservative approach of not forecasting active
11 implementation of regulatory requirements that are driven solely by the
12 CO during the remainder of 2016 for the TPCCMP project. The August
13 5, 2016 deadline for challenging the CO has now passed, with no
14 challenge being filed. Therefore, the CO is now final and FPL must
15 begin implementing it promptly, in the remainder of 2016 and beyond.

16

17 In addition, on August 15, 2016, the Miami-Dade County Department
18 of Environmental Resources Management (“MDC DERM”) entered into
19 an addendum with FPL to the October 2015 consent agreement
20 (respectively, the “CAA” and the “CA”). The CAA requires FPL to
21 undertake additional activities to address releases of groundwater into
22 deep artificial channels on the east side of the CCS.

1 Q. Please describe the impact on FPL's TPCCMP project of the CO
2 becoming final.

3 A. My August 4 testimony addressed the TPCCMP activities that are
4 required by the CO (Exhibit RRL-8 filed on August 4, 2016), but as I
5 noted above, FPL did not assume that it would begin implementing the
6 CO-specific activities during the remainder of 2016 because of the
7 potential that the CO would be challenged. With the CO now final, FPL
8 will begin implementing it during the remainder of 2016. Specifically,
9 FPL is moving forward with the following CO activities in 2016 and
10 2017:

- 11 • Implementation of the nutrient management plan, including
12 preparation, filing a report with the FDEP in September 2016
13 outlining potential sources of nutrients found in the CCS and a
14 plan for minimizing nutrient levels in the CCS;
- 15 • Implementation of sediment management activities such as
16 completion of berm compaction;
- 17 • Implementation of saltwater interface modeling;
- 18 • Commencement of activities related to transfer of Biscayne Bay
19 Coastal Wetlands parcels;
- 20 • Deposit of \$1.5M into an escrow agreement to be used to
21 finance activities in the Turkey Point region that support
22 mitigation of saltwater intrusion;

- 1 • Implementation activities related to groundwater monitoring
- 2 wells near Kingman Road;
- 3 • Restoration activities in the Barge Basin and Turtle Point Canal;
- 4 • Permitting, construction, implementation of additional monitoring
- 5 wells and sampling activities as specified in the CO; and
- 6 • Activities to comply with required monitoring and reporting.

7 **Q. Please describe the impact to FPL's TPCCMP project of the MDC**
8 **DERM's CAA.**

9 A. The CAA requires FPL to undertake the following activities in addition
10 to those required under the CA that I described in my August 4
11 testimony:

- 12 • Prepare a Site Assessment Plan ("SAP") to identify the
- 13 ammonia sources and delineate their extent in surface water
- 14 within the deep artificial channels on the east side of the CCS.
- 15 • Implement the SAP and submit the results to the MDC DERM.
- 16 • Submit to the MDC DERM and, upon approval, implement a
- 17 Corrective Action Plan for environmental restoration, proposed
- 18 modifications to operations to prevent future ammonia
- 19 exceedences, and modifications to the CCS to eliminate
- 20 contributions of CCS water to surface water.

21 **Q. Are the CO and CAA subject to administrative challenge at this**
22 **time?**

1 A. No. The CO was subject to administrative challenge until August 5,
2 2016, but no challenges were filed and so the CO is now final. The
3 CAA is also final, as there are no administrative procedures for
4 challenging the MDC DERM consent agreements.

5 **Q. What is FPL's current estimate of 2016 costs associated with**
6 **required TPCCMP project activities?**

7 A. FPL now estimates that it will incur O&M expenses of \$32.4 million in
8 2016. This represents an increase of \$4.6 million over the August 4
9 filing because of the increased level of activities that FPL expects to
10 undertake as a result of the now-final CO and the CA Addendum.
11 Capital costs associated with the TPCCMP project for the 2016 period
12 did not change from those provided in the August 4, 2016 filing, as
13 these costs are associated with the Floridan wells and were not
14 impacted by recent developments.

15

16 Projected 2016 O&M expenses relate to the following:

2016 Projected O&M Costs		
Description of Expenditures	Cost (\$M's)	Requirement
CCS Sediment Removal	3.01	State of Florida Consent Order
Construct Biscayne Aquifer Recovery Well System	17.45	Miami - Dade County Consent Agreement
Water Quality External Canals - Turning Basin Well	1.73	NOV Water Quality Impact to Biscayne Bay
Remediation of Ammonia Intrusion in Remnant Canals - Turning Basin & Turtle Point	0.25	Miami - Dade County Consent Agreement Addendum
Consent Order Additional Monitoring Cluster Wells	0.37	State of Florida Consent Order

Barge Canal Turning Basin Back Fill	0.06	State of Florida Consent Order
Turtle Point Back Fill	0.08	State of Florida Consent Order
Nutrient Management Plan / Algae Control & Remediation	3.35	State of Florida Consent Order
CO Monitoring / Mitigation	6.06	State of Florida Consent Order

1

2 **Q. What is FPL's current estimate of 2017 costs associated with**
3 **required TPCCMP project activities?**

4 **A.** In 2017 FPL is projected to incur approximately \$1.8 million in capital
5 costs associated with the Floridan Aquifer System Wells and \$73.8
6 million in O&M expenses for the TPCCMP project. Projected O&M
7 expenses relate to the following:

2017 Projected O&M Costs

Description of Expenditures	Cost (\$M's)	Requirement
CCS Sediment Removal	10.00	State of Florida Consent Order
Construct Biscayne Aquifer Recovery Well System	37.98	Miami - Dade County Consent Agreement
Remediation of Ammonia Intrusion in Remnant Canals - Turning Basin & Turtle Point	0.24	Miami - Dade County Consent Agreement Addendum
Consent Order Additional Monitoring Cluster Wells	1.49	State of Florida Consent Order
Barge Canal Turning Basin Back Fill	12.94	State of Florida Consent Order
Turtle Point Back Fill	5.44	State of Florida Consent Order
Nutrient Management Plan / Algae Control & Remediation	2.00	State of Florida Consent Order
CO Monitoring / Mitigation	3.69	State of Florida Consent Order

8

9 **Q. How much does FPL expect to spend on TPCCMP project**
10 **compliance activities from 2016 - 2026?**

1 A. Based on current understanding and assumptions regarding
2 environmental conditions and required compliance activities, FPL
3 expects to incur approximately \$206 million in O&M and Capital
4 compliance costs from 2016-2026. As shown above, the majority of
5 the costs -- approximately \$9.5 million in capital costs and \$106.2
6 million in O&M expenses -- will be incurred in 2016 and 2017. This is
7 because construction of major compliance facilities such as the
8 recovery and monitoring wells must occur at the outset. After 2017, it
9 is anticipated that the level of costs for the TPCCMP project will
10 significantly decrease.

11 Q. Does this conclude your testimony?

12 A. Yes.

**ADDENDUM 1 TO THE OCTOBER 7, 2015 CONSENT AGREEMENT
BETWEEN
MIAMI-DADE COUNTY DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES, DIVISION OF
ENVIRONMENTAL RESOURCES MANAGEMENT
AND
FLORIDA POWER & LIGHT COMPANY**

This Consent Agreement Addendum 1, entered into by and between Miami-Dade County Department of Regulatory and Economic Resources, Division of Environmental Resources Management (hereinafter referred to as "DERM"), and Florida Power & Light Company, (hereinafter referred to as "Respondent"), pursuant to Section 24-7(15)(c) of Chapter 24 of the Code of Miami-Dade County, shall serve to amend the October 7, 2015 Consent Agreement (Attachment 1) executed for the Turkey Point power plant facility and Cooling Canal System (CCS) located at, near or in the vicinity of 9700 SW 344 Street, UnIncorporated, Miami-Dade County, Florida (DERM IW-3, IW-16, IW5-6229, DWO-10, CLI-2014-0312, HWR-851).

Subsequent to the Consent Agreement executed on October 7, 2015, a review of sampling data submitted by FPL and water quality sampling conducted by DERM revealed levels of ammonia as N exceeding the water quality standards set forth in Section 24-42(4) and clean-up target levels in Section 24-44(2)(f)(v)1, which constitutes water pollution as defined in Section 24-5 of the Code of Miami-Dade County. These results include ammonia as N in samples collected from surface water monitoring stations tidally connected to Biscayne Bay including, but not limited to, TPBBSW-7 and TPBBSW-8. This Consent Agreement requires FPL to take action to address the County's alleged violations of water quality standards and cleanup target levels relating to the exceedance of ammonia.

DERM and the Respondent agree to add Paragraph 34 to the October 7, 2015 Consent Agreement to address the referenced ammonia violations as follows:

34. Addendum 1.

- a. Within thirty (30) days of the execution of Addendum 1 of this Consent Agreement, the Respondent shall submit a Site Assessment Plan to DERM for review and approval which shall allow for the identification of the source(s) of the ammonia exceedances and the delineation of the vertical and horizontal extent of the subject ammonia exceedances in surface water. Said plan shall be adequate to address the ammonia exceedances to the surface waters surrounding the facility, including but not limited to, waters tidally connected to Biscayne Bay.
- b. Within sixty (60) days of DERM's approval of the Site Assessment Plan, the Respondent shall implement said plan and submit to DERM a Site Assessment Report for review and approval or approval with modifications which shall address the requirements of Item (a) above. The SAR shall include copies of the laboratory analytical reports, sampling logs, chain of custody forms and other information in accordance with the DERM approved Site Assessment Plan. All data submitted shall be in final form and no estimates or preliminary data will be accepted. All appropriate QA/QC documentation shall be submitted with the analytical results. In addition, all testing results submitted to DERM in response to this Addendum may be listed using the data form attached (Attachment 2).

- c. Within ninety (90) days of approval of the Site Assessment Report, the Respondent shall submit to DERM for review and approval a Corrective Action Plan (CAP) prepared by a State of Florida registered professional engineer which, shall include, but not be limited to, the following:
 - i. Design of an environmental restoration plan to correct the exceedences of ammonia standards and criteria,
 - ii. Details of proposed process modifications or changes in operational systems to manage and control the source(s) of ammonia to prevent future violations of the provisions of Chapter 24 at the subject facility,
 - iii. Physical, structural, or hydraulic modifications in the area of the CCS and adjacent surface waters to eliminate the contributions of CCS waters to the surface waters of Miami-Dade County, and
 - iv. A time table for implementation and completion of the Corrective Action Plan.
- d. Upon approval of the CAP, the Respondent shall implement said CAP in accordance with the approved timetable in order to cease discharges from the Turkey Point facility that cause or contribute to ammonia exceedences in violation of County water quality standards, cleanup target levels or which cause water pollution.
- e. Within thirty (30) days of the execution of Addendum 1 to this Consent Agreement, the Respondent shall pay DERM administrative costs in the amount of five thousand dollars (\$5,000.00). The payment shall be made payable to Miami-Dade County and sent to DERM, 701 NW 1st Court, 6th Floor, Miami, Florida 33136, Attention: Barbara Brown.

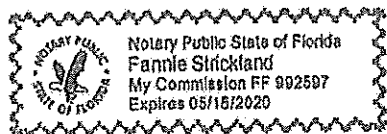
All other provisions of the October 7, 2015 Consent Agreement shall remain unchanged and in full force and effect for the duration of that Agreement.

This Consent Agreement Addendum 1 and the provisions herein shall become effective upon execution by the Director of DERM or the Director's designee.

[REMAINDER OF PAGE INTENTIONALLY BLANK; SIGNATURES APPEAR ON FOLLOWING PAGE]

8/12/2016
Date

[Signature]
Signature
Randall R. LaBauve
Print Name and Title



Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408
Respondent

Before me, the undersigned authority, personally appeared Randall R. LaBauve
who after being duly sworn, deposes and says that he has read the foregoing.

Subscribed and sworn to before me this 12th day of August, 20 16 by
Randy R. LaBauve
(Name of affiant)

Personally Known ☒ or Produced Identification ____
(Check One)

Type of Identification Produced: _____

[Signature]
Notary Public

DO NOT WRITE BELOW THIS LINE OFFICE USE ONLY

8-15-2016
Date

[Signature]
Lee N. Hefty, Director
Environmental Resources Management

[Signature]
Witness

[Signature]
Witness

MIAMI-DADE COUNTY, through its
DEPARTMENT OF REGULATORY AND
ECONOMIC RESOURCES, DIVISION OF
ENVIRONMENTAL RESOURCES
MANAGEMENT,

CONSENT AGREEMENT

Complainant,

v.

FLORIDA POWER & LIGHT COMPANY,

Respondent.

_____ /

This Consent Agreement, entered into by and between the Complainant, MIAMI-DADE COUNTY, through its DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES, DIVISION OF ENVIRONMENTAL RESOURCES MANAGEMENT ("DERM"), and the Respondent FLORIDA POWER & LIGHT COMPANY ("FPL"), pursuant to Section 24-7(15)(c) of the Code of Miami-Dade County, shall serve to redress alleged violations of Chapter 24 of the Code of Miami-Dade County located near, surrounding, or in the vicinity of the Cooling Canal System located at Turkey Point on FPL's property, as further described herein, in Miami-Dade County, Florida.

DERM and FPL enter into the following Consent Agreement:

FINDINGS OF FACT

1. DERM is a division of Miami-Dade County, a political subdivision of the State of Florida, which is empowered to control and prohibit pollution and protect the environment within Miami-Dade County pursuant to Article VIII, Section 6 of the Florida Constitution, the Miami-Dade County Home Rule Charter and Section 403.182 of the Florida Statutes.
2. Florida Power & Light Company ("FPL") is the owner and operator of the Turkey Point Power Plant, and FPL is the owner and operator of approximately a 5,900-acre network of unlined canals (the "Cooling Canal System" or "CCS") on the FPL property described in the map in Exhibit A (the "Property").

3. In 1971, FPL signed a Consent Decree with the U.S. Department of Justice that required the construction, after permitting, of a closed-loop cooling configuration, with no discharge to surface waters.
4. The Florida Department of Pollution Control (later to become the Florida Department of Environmental Protection), in 1971, issued Construction Permit No. IC-1286 for the CCS. In 1972, Dade County issued Zoning Use Permit No. W-49833 for the excavation of the proposed Alternate Cooling Water Return Canal. FPL represents that in 1973, the construction of the CCS was completed; and the CCS was closed from the surface waters of both Biscayne Bay and Card Sound, becoming a closed-loop system.
5. An approximate 18 foot deep interceptor ditch located along the west side of the CCS was designed and constructed to create a hydraulic barrier to keep water in the CCS from migrating inland or westward.
6. In 1972, FPL entered into an agreement with the Central and Southern Florida Flood Control District (later to become the South Florida Water Management District or "District") addressing the operations and impacts of the CCS. The agreement has been updated several times, with the most recent version being the Fifth Supplemental Agreement between the District and FPL entered into on October 16, 2009 ("Fifth Supplemental Agreement") which included an extensive monitoring program for the CCS, entitled the Turkey Point Plant Groundwater, Surface Water and Ecological Monitoring Plan ("2009 Monitoring Plan"), incorporated as Exhibit A of the Fifth Supplemental Agreement.
7. In a letter dated April 16, 2013, the District notified FPL of their determination that saline water from the CCS has moved westward of the L-31E Canal in excess of those amounts that would have occurred without the existence of the CCS, and pursuant to the provisions of the Fifth Supplemental Agreement, initiated consultation with FPL for the mitigation, abatement or remediation of the saline water movement.
8. DERM issued a Notice of Violation dated October 2, 2015 (the "NOV") to FPL, alleging violations of Chapter 24 of the Code of Miami-Dade County, for alleged violations of County water quality standards and criteria in groundwater attributable to FPL's actions, and specifically for groundwaters outside the boundaries of FPL's Cooling Canal System and beyond the boundaries of the Property.

9. The phrase "hypersaline water" as used herein is defined as water that exceeds 19,000 mg/L chlorides.
10. DERM maintains there is hypersaline water attributable to FPL's actions in the groundwaters outside the boundaries of the Property, which exceeds County water quality standards and criteria. FPL acknowledges the presence of hypersaline water in certain areas outside the boundaries of the Property. For waters that do not reach the level of hypersalinity, DERM and FPL do not agree on the applicable "background" standards for chlorides.
11. In 2013 and 2014, FPL experienced water quality issues within the CCS, including increases in temperature and salinity, and FPL sought approvals from various regulatory agencies for actions to improve the water quality within the CCS.
12. DEP issued an Administrative Order, No. 14-0741, on December 23, 2014, requiring FPL to, among other things, reduce and maintain the annual average salinity of the CCS at a practical salinity of 34, and that Administrative Order is currently the subject of an Administrative Hearing.
13. Both DERM and FPL agree and acknowledge that it would be beneficial to improve the water quality within the Cooling Canal System itself, and FPL has already undertaken some efforts to improve the CCS water quality.
14. This Consent Agreement requires FPL to take action to address the County's alleged violations of County water quality standards and criteria in groundwaters outside the CCS as described in the NOV. As part of these actions, this Consent Agreement also requires FPL to take into account its efforts to improve CCS water quality and the potential and actual impacts of such actions on water resources outside the CCS, to not cause or contribute to (i) the exacerbation of alleged violations of County water quality standards or criteria or (ii) future violations of County water quality standards or criteria in the groundwaters or surface waters outside the CCS.
15. FPL hereby agrees to the terms of this Consent Agreement without admitting the allegations made by the above-mentioned NOV.

16. In an effort to expeditiously resolve this matter and to ensure compliance with Chapter 24 of the Code of Miami-Dade County, and to avoid time consuming and costly litigation, the parties hereto agree to the following, and it is ORDERED:

REQUIREMENTS

17. FPL shall undertake the following activities to specifically address water quality impacts associated with the CCS, as alleged in the NOV. The objective of this Consent Agreement will be for FPL to demonstrate a statistically valid reduction in the salt mass and volumetric extent of hypersaline water (as represented by chloride concentrations above 19,000 mg/L) in groundwater west and north of FPL's property without creating adverse environmental impacts. A further objective of this Consent Agreement is to reduce the rate of, and, as an ultimate goal, arrest migration of hypersaline groundwater. Recognizing other factors beyond FPL's control may influence movement of groundwater in the surficial aquifer, FPL shall reasonably take into account such factors when developing and implementing remedial actions to minimize the timeframe for achieving compliance with this Consent Agreement.

a. Abatement.

- i. DERM acknowledges that FPL is planning to undertake the following:
 1. pursue permitting, construction and operation of up to six Upper Floridan Aquifer System wells in accordance with the Site Certification Modification that is the subject of DOAH Case No. 15-1559EPP.
 2. continue the use of the existing marine wells (SW-1, SW-2, and PW-1) as a short term resource to lower and maintain salinities. FPL shall work to avoid the use of the marine wells, except under extraordinary circumstances.
 3. continue operation of the authorized L-31E canal pumps as a short term resource only, in accordance with the terms and conditions of the applicable approvals. FPL acknowledges that the use of water from the L-31E canal is intended only as a short term resource to lower CCS salinity. FPL anticipates the need for this resource for the next two years to reduce salinity as it transitions into the long term resources that are intended to maintain the lower salinity in the CCS. FPL acknowledges that additional regulatory

approvals will be required for continuation of this activity beyond the expiration of the existing approvals.

- ii. FPL shall evaluate alternative water sources to offset the CCS water deficit and reduce chloride concentration in the CCS, and as a means of abating the westward movement of CCS groundwater. FPL will consider the practicality and appropriateness of using reclaimed wastewater from the Miami-Dade County South District Waste Water Treatment Plant as an alternative water source. FPL will provide DERM a summary of its Alternative Water Supply plan within 180 days of executing the Consent Agreement. FPL recognizes the importance and potential for reuse water, and FPL will make good faith efforts to implement the use of reuse water where practicable.
 - iii. FPL shall also conduct a review of the Interceptor Ditch operations to determine if current design and/or operations can be practicably modified to improve its function recognizing the current status of the CCS and surrounding wetlands. FPL will provide a summary of its Interceptor Ditch Review within 180 days of executing the Consent Agreement.
 - iv. The alternative water sources and any modifications to Interceptor Ditch design or operation shall be authorized through the appropriate regulatory processes and shall be demonstrated to not create adverse impacts to surface waters, groundwater, wetland or other environmental resources consistent with the Fifth Supplemental Agreement.
- b. Remediation. FPL shall develop and implement the following actions to intercept, capture, contain, and retract hypersaline groundwater (groundwater with a chloride concentration of greater than 19,000 mg/L) to the Property boundary to achieve the objectives of this Consent Agreement.
- i. Phase I. FPL shall design, permit, and construct a Biscayne Aquifer Recovery Well System (RWS) based on the results of a variable density dependent groundwater model which shall be sufficient to support the design of the RWS to intercept, capture, and contain the hypersaline plume; support authorization through the appropriate regulatory processes; and demonstrate that it will not create adverse

impacts to groundwater, wetland (hydroperiod or water-stage), or other environmental resources. Final operation and design will be informed by an Aquifer Performance Test (APT). FPL shall provide its design and supporting information for the Recovery Well System and associated monitoring wells for DERM review and approval within 180 days of executing the Consent Agreement. FPL shall proceed with implementation within one year of executing the Consent Agreement, subject to regulatory timelines not in FPL's control. The initial design will be based on up to 12 MGD disposal capacity recognizing existing on-site capability. Efficacy of this design constraint will be reviewed in Phases 2, 3, and 4.

- ii. Phase 2. FPL shall operate the RWS in accordance with all local, state, and federal regulatory requirements, collect data as required by the monitoring program, and employ the data to inform and reduce the uncertainty of the groundwater model. Status and efficacy of the system operation in meeting the objectives of this Consent Agreement and results of continued groundwater model refinement will be provided in the annual reports required in Paragraph 17d.
- iii. Phase 3. After five years, FPL shall evaluate the effectiveness of the RWS in achieving the goal to intercept, capture, contain, and ultimately retract the hypersaline groundwater plume. This evaluation shall include estimated milestones and be based on the results of the monitoring data and refined groundwater/surfacewater model, which will be submitted to DERM. If the analysis indicates that the RWS is not anticipated to achieve the goal to intercept, capture, contain, and ultimately retract the hypersaline groundwater plume, FPL shall make recommendations for modifications to the project components and/or designs to ensure the ability of the system to achieve the objectives of the Consent Agreement. The evaluation and any proposed revisions shall be submitted to DERM for review and approval.
- iv. Phase 4. After ten years, FPL shall review the results of the activities and progress to achieve the objectives of this Consent Agreement, and this evaluation shall be submitted to DERM. If monitoring demonstrates that the activities are not achieving the objectives of this Consent Agreement, FPL shall revise the project components and/or designs to ensure the ability of the system to achieve the objectives of this

Consent Agreement. The proposed revisions shall be submitted to DERM for review and approval.

c. Regional Hydrologic Improvement Projects. In addition, FPL agrees to undertake the following:

- i. Raise control elevations in the Everglades Mitigation Bank. Within 30 days of the effective date of this Consent Agreement, FPL shall raise the control elevations of the FPL Everglades Mitigation Bank ("EMB") culvert weirs to no lower than 0.2 feet lower than the 2.4 foot trigger of the S-20 structure and shall maintain this elevation. After the first year of operation, FPL shall evaluate the change in control elevation, in regards to improvements in salinity, water quality, and lift in the area, and if FPL determines that the change in control elevations is not effective, or that FPL is negatively impacted in receiving mitigation credits as a result of this action, FPL will consult with DERM and propose potential alternatives.
- ii. Fill portions of the Model Lands North Canal within the Everglades Mitigation Bank. Within 30 days of the effective date of the Consent Agreement, FPL shall seek all necessary regulatory approvals to place excavated fill from the adjoining roadway into the Model Lands North Canal within FPL's Everglades Mitigation Bank. Upon issuance of such regulatory approvals, FPL shall, starting on the east end, fill the Model Lands North Canal. This Consent Agreement only requires FPL to fill to the extent the fill is available from the adjoining roadway permitted to be degraded.
- iii. If the District determines that flowage easements are needed from FPL in order to increase the operational stages of the S-20 water control structure as planned and approved by CERP, FPL agrees to provide such flowage easements for FPL owned land within the Everglades Mitigation Bank, in favor of the District within six months of the determination.
- iv. FPL acknowledges the benefit of hydrologic restoration projects contemplated by the Comprehensive Everglades Restoration Project ("CERP"), as well as other government entities, adjacent and to the west of the CCS in controlling movement of hypersaline and saline waters in the Biscayne Aquifer. FPL commits to working with

local, state and federal agencies to facilitate implementation of these projects to promote improved hydrologic conditions.

d. Monitoring and Reporting. FPL shall conduct monitoring to evaluate the progress made in achieving the objectives of this Consent Agreement. This includes actions that result from satisfying the abatement, remediation and hydrologic improvement components of this Consent Agreement. FPL shall initiate the monitoring and reporting requirements identified below within 30 days of executing the Consent Agreement. The monitoring shall include the following:

- i. FPL shall facilitate DERM access to all data from continuous electronically monitored stations.
- ii. FPL shall continue to provide monthly and quarterly reports substantially consistent with those required in M-D Class I permit CLI-2014-0312, beyond the expiration of the permit.
- iii. FPL shall employ Continuous Surface Electromagnetic Mapping (CSEM) methods to assess the location and orientation of the hypersaline plume west and north of the CCS.
- iv. FPL shall add three groundwater monitoring clusters (shallow, mid and deep) to monitor groundwater conditions in the model lands basin. The well clusters shall be similar in design and function to existing groundwater monitoring wells in the region as part of the CCS monitoring program, and shall be geographically located in consultation with DERM.
- v. FPL shall submit annual reports providing an evaluation of progress in achieving the objectives of this Consent Agreement, status of implementing projects identified above, and the results of monitoring to determine the impacts of these activities. Recommendations for refinements to the activities will be included in the annual report. This may include deletions of monitoring that is demonstrated to no longer be needed, or additional monitoring that is warranted based on observations.

SAFETY PRECAUTIONS

18. FPL shall maintain the subject property during the pendency of this Consent Agreement in a manner which shall not pose a hazard or threat to the public at large or the environment and shall not cause a nuisance or sanitary nuisance as set forth in Chapter 24 of the Code of Miami-Dade County, Florida.

VIOLATION OF REQUIREMENTS

19. This Consent Agreement constitutes a lawful order of the DERM Director and is enforceable in a civil court of competent jurisdiction. Violation of any requirement of this Consent Agreement may result in enforcement action by DERM. Each violation of any of the terms and conditions of this Consent Agreement by FPL shall constitute a separate offense.

SETTLEMENT COSTS

20. FPL hereby certifies that it has the financial ability to comply with the terms and conditions herein and to comply with the payment of settlement costs specified in this Agreement.
21. DERM has determined that due to the administrative costs incurred by DERM for this matter, a settlement of \$30,000.00 is appropriate. FPL shall, within sixty (60) days of the effective date of this Consent Agreement, submit to DERM a check in the amount of \$30,000.00 for full settlement payment. The payment shall be made payable to Miami-Dade County and sent to the Division of Environmental Resources Management, c/o Barbara Brown, 701 NW 1st Court, 6th Floor, Miami, FL 33136-3912.
22. In the event that FPL fails to submit, modify, implement, obtain, provide, operate and/or complete those items listed in paragraph 17 herein, FPL shall pay DERM a civil penalty of one hundred dollars (\$100.00) per day for each day of non-compliance and FPL may be subject to enforcement action in a court of competent jurisdiction for such failure pursuant to those provisions set forth in Chapter 24 of the Code of Miami-Dade County. Any such payments shall be made by FPL to DERM within ten days of receipt of written notification and shall be sent to the Division of Environmental Resources Management, 701 NW 1st Court, 6th Floor, Miami, FL 33136-3912.

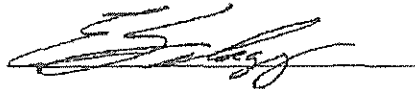
GENERAL PROVISIONS

23. FPL shall allow any duly authorized representative of DERM, with reasonable notification, to enter and inspect the CCS, Floridan wells, extraction wells, or any other relevant facilities, at any reasonable time for the purpose of ascertaining the state of compliance with the terms and conditions of this Consent Agreement. DERM shall comply with the plant safety and security precautions. FPL shall provide and maintain a point of contact at the Turkey Point Power Plant to assist DERM in accessing the facilities to be inspected.
24. On a quarterly basis (January, April, July, and October), DERM may collect surface and/or groundwater samples at the discretion of DERM at various monitoring locations in accordance with monitoring referenced in Paragraph 17 above.
25. FPL and DERM agree to cooperate and use best efforts moving forward related to this Consent Agreement.
26. Disputes related to or arising out of this Consent Agreement shall be construed consistent with the laws of the State of Florida and the United States, as applicable, and shall be filed in the state or federal courts of the State of Florida, as appropriate. Proceedings shall take place exclusively in the Circuit Court for Miami-Dade County, Florida or the United States District Court for the Southern District of Florida.
27. In consideration of the complete and timely performance by FPL of the obligations contained in this Consent Agreement, DERM waives its rights to seek judicial imposition of damages or civil penalties for the matters alleged in Notice of Violation and Consent Agreement.
28. Where FPL cannot meet timetables or conditions due to circumstances beyond FPL's control, FPL shall provide written documentation to DERM which shall substantiate that the cause(s) for delay or non-compliance was not reasonably in FPL's control. DERM shall make a determination of the reasonableness of the delay for the purpose of continued enforcement pursuant to paragraph 22 of this Consent Agreement.
29. DERM expressly reserves the right to initiate appropriate legal action to prevent or prohibit future violations of applicable laws, regulations, and ordinances or the rules promulgated thereunder.

30. Entry of this Consent Agreement does not relieve FPL of the responsibility to comply with applicable federal, state or local laws, regulations, and ordinances.
31. FPL acknowledges that this Consent Agreement is within the jurisdiction of Miami-Dade County. Nothing in this Consent Agreement is intended to expand, nor shall this Consent Agreement be construed to expand, the regulatory authority or jurisdiction of Miami-Dade County.
32. This Consent Agreement shall neither be evidence of a prior violation of this Chapter nor shall it be deemed to impose any limitation upon any investigation or action by DERM in the enforcement of Chapter 24 of the Code of Miami-Dade County.
33. This Consent Agreement shall become effective upon the date of execution by the DERM Director, or the Director's designee.

October 6, 2015

Date



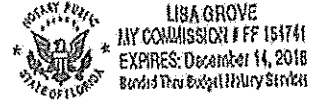
Eric E. Silagy
President & CEO
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408
Respondent

Before me, the undersigned authority, personally appeared Eric Silagy, who after being duly sworn, deposes and says that they have read and agreed to the foregoing.

Subscribe and sworn to before me this 6th day of October, 2015 by
Eric Silagy (name of affiant).

Personally known ☒ or Produced Identification _____.
(Check one)

Type of Identification Produced: _____



Lisa Grove
Notary Public Signature

Lisa Grove
Notary Public Printed Name

DO NOT WRITE BELOW THIS LINE – GOVERNMENT USE ONLY

OCT 1, 2015
Date

[Signature]
Lee N. Hefty, DERM Director
Miami-Dade County

[Signature]
Witness

Barbara Brown
Witness

**BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 160007-EI
FLORIDA POWER & LIGHT COMPANY**

AUGUST 4, 2016

ENVIRONMENTAL COST RECOVERY

**ACTUAL/ESTIMATED TRUE-UP
JANUARY 2016 THROUGH DECEMBER 2016**

TESTIMONY & EXHIBITS OF:

**TERRY J. KEITH
RANDALL R. LABAUVE**

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **FLORIDA POWER & LIGHT COMPANY**

3 **TESTIMONY OF RANDALL R. LABAUVE**

4 **DOCKET NO. 160007- EI**

5 **AUGUST 4, 2016**

6

7 **Q. Please state your name and address.**

8 A. My name is Randall R. LaBauve and my business address is 700
9 Universe Boulevard, Juno Beach, Florida 33408.

10 **Q. By whom are you employed and in what capacity?**

11 A. I am employed by NextEra Energy, Inc. ("NEE") as Vice President of
12 Environmental Services.

13 **Q. Please describe your educational background and professional**
14 **experience.**

15 A. I earned a Bachelor of Arts from Louisiana State University in 1983
16 and my Juris Doctor degree from Louisiana State University in 1986. I
17 have been employed by Florida Power and Light Company ("FPL"), or
18 its affiliate NextEra Energy Resources, in multiple roles since 1995.
19 From 1995 to 1996, I served as a principal attorney in the law
20 department, and I served as Director of Environmental Services from
21 1996 to 2002. Since 2002, I have held the position of Vice President of
22 Environmental Services. In that role, I have overall responsibility for

1 environmental strategy, licensing, compliance and environmental
2 relations efforts for the Company.

3 **Q. Have you previously testified before this Commission?**

4 A. Yes. I have sponsored testimony before this Commission in previous
5 ECRC dockets.

6 **Q. What is the purpose of your testimony in this proceeding?**

7 A. The purpose of my testimony is to provide a status update for the
8 Turkey Point Cooling Canal Monitoring Plan ("TPCCMP") Project,
9 addressing the recent regulatory actions that are affecting the
10 environmental compliance activities undertaken by FPL pursuant to
11 this Project. In order to put those regulatory actions into context, my
12 testimony will also provide a brief overview of the Turkey Point cooling
13 canal system ("CCS") and its regulatory and operational history.

14 **Q. Have you prepared, or caused to be prepared under your
15 direction, supervision, or control, an exhibit in this proceeding?**

16 A. Yes. I am sponsoring the following exhibits:

- 17 • RRL-2 - 1971 USDOJ Settlement Agreement
- 18 • RRL-3 - National Pollutant Discharge Elimination System
19 ("NPDES")/Industrial Wastewater Permit Number
20 FL0001562
- 21 • RRL-4 - Fifth Supplemental SFWMD Agreement
- 22 • RRL-5 - Turkey Point Extended Power Uprate Site
23 Certification Conditions of Certification IX and X

- 1 • RRL-6-December 2014 FDEP Administrative Order
- 2 • RRL-7 - October 2015 MDC DERM Consent Agreement
- 3 • RRL-8 - June 2016 FDEP Consent Order

4 **Q. Please describe the CCS.**

5 A. The CCS is an approximately 5,900-acre closed cycle system that was
6 designed to provide for condenser and auxiliary equipment cooling for
7 Turkey Point Units 1 through 4 and is currently serving that purpose for
8 Units 1, 3 and 4. The CCS is also used by Unit 5 to discharge cooling
9 tower blowdown. This closed cycle system does not have a point
10 source discharge directly into Biscayne Bay, and cooling water is
11 constantly recycled through the plant. Some water is lost via
12 evaporation and seepage. Until recently, make-up water principally
13 consisted of inflows from groundwater beneath the cooling canals and
14 rainwater. As a result of the natural evaporation process, water in the
15 CCS is hypersaline, meaning that it has a higher salt content than
16 average seawater.

17 **Q. Please provide a brief description of why the CCS was designed**
18 **and created.**

19 A. In 1971, after litigation with the U.S. Department of Justice ("USDOJ"),
20 FPL changed its original operation utilizing once-through cooling for
21 the Turkey Point Units 1 and 2 and constructed the CCS as directed by
22 the settlement reached between FPL and the USDOJ. A copy of the
23 USDOJ settlement agreement is attached as Exhibit RRL-2. The

1 closed-loop system of salt water canals was constructed in accordance
2 with federal guidelines and has been operated by FPL per the
3 settlement agreement ever since. In February 1972, FPL entered into
4 an agreement with the Southern and Central Florida Flood Control
5 District which established the SFWMD's oversight and approval
6 authority for FPL's design, construction, operation and monitoring of
7 the CCS (the Southern and Central Florida Flood Control District later
8 became the South Florida Water Management District; it will be
9 referred to in my testimony as the "SFWMD" and its agreement with
10 FPL will be referred to as the "SFWMD Agreement").

11 **Q. Does FPL hold environmental permits that apply to operation of**
12 **the CCS?**

13 A. Yes, the CCS is a permitted industrial wastewater facility. FPL is the
14 permittee and operates the CCS under National Pollutant Discharge
15 Elimination System ("NPDES")/Industrial Wastewater Permit Number
16 FL0001562. The facility's initial NPDES permit was issued by the
17 Environmental Protection Agency on June 14, 1978. The Florida
18 Department of Environmental Regulation (now FDEP) issued an
19 Industrial Wastewater discharge permit on October 15, 1982. These
20 permits were combined following the delegation of the NPDES
21 program to the FDEP on May 1, 1995. A copy of the current NPDES
22 permit is attached as Exhibit RRL-3. For more than 40 years, FPL has
23 been closely monitored, both from a construction and operational

1 standpoint, by federal, state, and local agencies to ensure ongoing
2 protection of water quality and the environment, and FPL has complied
3 with applicable permits and regulations. FPL has worked
4 collaboratively with federal, state, and local agencies to make
5 decisions and to take action to meet applicable regulatory
6 requirements concerning the CCS.

7 **Q. Were salinity levels a concern when the CCS was originally**
8 **designed?**

9 A. Yes. In the 1970s, when FPL was required to design, construct, and
10 operate the CCS, it was known that the saltwater/freshwater interface
11 was already located up to six miles inland, and that this saltwater
12 intrusion in the area around the Turkey Point plant was due to many
13 factors such as freshwater withdrawals, drought, drainage and flood
14 control structures, and other human activities. During the design and
15 permitting of the CCS, it was well understood that the unlined cooling
16 canals would exchange with the saline groundwater below, and that
17 salinity could increase in the canals during operations. In recognition
18 of these factors, as well as a common desire to limit westward
19 migration of saltwater, the SFWMD Agreement required FPL to design
20 the CCS with an approximately 18 foot deep interceptor ditch along the
21 western edge of the CCS. Using the best information available at the
22 time, the interceptor ditch was designed to restrict movement of saline

1 water from the CCS west of the L-31 Canal to amounts that otherwise
2 would have occurred without the existence of the CCS.

3

4 Operational criteria for the seepage control system pumps were
5 spelled out in the SFWMD Agreement along with a monitoring plan
6 consisting of 38 monitoring well sites and seven surface water sites
7 monitored bi-weekly and monthly. Monitoring data was shared with the
8 SFWMD in quarterly meetings. The SFWMD Agreement provided that
9 if, in the sole judgment of the SFWMD, the objectives of the Agreement
10 were not being achieved, FPL would be required to implement other
11 feasible engineering measures to achieve those objectives.

12 **Q. Has the SFWMD Agreement been modified over time?**

13 A. Yes. In July, 1983, the SFWMD Agreement was modified based on
14 findings by the SFWMD that FPL had met all its obligations in the
15 original SFWMD Agreement and that past monitoring activities
16 indicated that monitoring the impacts of the CCS could be
17 accomplished by a reduced monitoring network. The monitoring
18 network was reduced to seven wells and five surface water transects
19 across the interceptor ditch and CCS. Groundwater monitoring was
20 required quarterly and surface water bi-weekly. The data were
21 summarized and reported to the SFWMD for their review annually.
22 From that point through 2009, FPL has provided the relevant
23 environmental agencies with periodic monitoring reports.

1 Most recently, the SFWMD Agreement was modified in 2009. This
2 version, referred to as the Fifth Supplemental Agreement, included an
3 extensive monitoring program for the CCS. A copy of the Fifth
4 Supplemental Agreement is attached as Exhibit RRL-4.

5 **Q. Did the regulatory requirements for the CCS change when FPL**
6 **received its site certification for the Turkey Point Units 3 and 4**
7 **extended power uprate ("Turkey Point EPU")?**

8 A. Yes. In 2009, a comprehensive monitoring program was added as a
9 condition of the Site Certification. Conditions of Certification IX and X
10 ("COC IX and X") required FPL to develop a monitoring plan for the
11 CCS and the areas surrounding the CCS. COC IX and X are
12 contained within the Turkey Point Plant Conditions of Certification
13 document, the current edition of which is attached as Exhibit RRL-5.
14 The resulting monitoring plan was finalized in October 2009 and
15 included new requirements related to additional groundwater and
16 surface water monitoring stations installation, increased data
17 collection, and increased reporting.

18 **Q. Did FPL seek and receive Commission approval for an ECRC**
19 **project to recover the costs of complying with COC IX and X?**

20 A. Yes. In Docket No. 090007-EI, FPL petitioned for approval of the
21 Turkey Point Cooling Canal Monitoring Plan ("TPCCMP") Project, and
22 it was approved by stipulation in Order No. PSC-09-0759-FOF-EI.

1 **Q. What was the scope of the TPCCMP Project, as presented by FPL**
2 **and approved by the Commission?**

3 A. The initial focus of the TPCCMP Project was on implementing
4 groundwater monitoring in the vicinity of the CCS to determine the
5 impact of the Turkey Point EPU on the groundwater in the vicinity of
6 the CCS. However, my testimony accompanying FPL's petition for
7 approval of the TPCCMP Project made it clear that, if the Florida
8 Department of Environmental Protection ("FDEP"), in consultation with
9 the SFWMD and the Miami Dade County Department of Environmental
10 Resources Management ("MDC DERM") found that water from the
11 CCS was causing harm or potential harm to adjacent waters,
12 expanded assessment and remediation measures would be required
13 pursuant to COC IX and X.

14 **Q. Please summarize the regulatory activity and corresponding FPL**
15 **action related to the CCS that occurred between 2009 and 2013.**

16 A. Commencing in 2009, FPL began implementing the groundwater
17 monitoring program required pursuant to COC IX and X. Construction
18 of the monitoring network and initiation of monitoring began in 2010.
19 The Comprehensive Pre-uprate Monitoring Report containing data and
20 analyses covering the pre-uprate monitoring period of June 2010
21 through June 2012 was completed and submitted to the appropriate
22 agencies on October 31, 2012. Modifications associated with the
23 uprate of Unit 3 and 4 occurred between February 2012 and May

1 2013.

2 **Q. Did regulatory activity increase for the CCS starting in 2013?**

3 A. Yes. In 2013, the SFWMD identified increasing salinity trends and
4 requested to meet with FPL, the FDEP, and MDC DERM to consult on
5 what actions, if any, FPL would have to take. The result of these
6 consultations was an Administrative Order ("AO") issued by the FDEP
7 in December 2014 directing FPL to develop a Salinity Management
8 Plan to lower salinity in the CCS, among other requirements. A copy
9 of the AO is attached as Exhibit RRL-6. With severe drought
10 conditions continuing in the area, and as the AO was being finalized,
11 FPL began taking several actions in the Fall of 2014 to lower salinity in
12 the CCS. FPL needed to begin taking actions at that time, in order to
13 maximize its ability to achieve the required salinity reduction on the
14 tight timetable that would be specified in the AO. These actions
15 included obtaining seasonally available excess stormwater from a
16 regional surface water canal under direction from the SFWMD,
17 applying for a Site Certification Modification to install an Upper Floridan
18 Aquifer well system providing 14 million gallons per day of freshening
19 water, and conducting sediment management activities to improve
20 thermal functioning of the CCS to reduce evaporation.

21 **Q. Was additional permitting and monitoring required in 2014 in**
22 **order to allow FPL to withdraw excess stormwater from the L-31**

1 **Canal to reduce salinity in the CCS to begin compliance with the**
2 **AO?**

3 A. Yes. MDC DERM required that a Class 1 Wetlands Permit be
4 obtained as part of implementation the CCS salinity reduction strategy.
5 This permit required additional monitoring of the areas surrounding the
6 CCS. In 2015, in order to once again allow FPL to withdraw excess
7 stormwater from the L-31 Canal, MDC DERM modified the Class 1
8 Wetlands permit by extending the expiration date by one year. In the
9 modified permit, MDC DERM also included additional monitoring for
10 ammonia and other constituents at several artificially deep (dredged)
11 water locations along the eastern side of the cooling canals in
12 Biscayne Bay.

13 **Q. Was the AO challenged by any parties?**

14 A. Yes. The AO was challenged by several parties, including MDC
15 DERM. In October 2015, MDC DERM withdrew its challenge after it
16 entered into a Consent Agreement ("CA") with FPL, which required
17 FPL to continue freshening activities, remediate the hypersaline
18 groundwater plume and conduct additional monitoring. A copy of the
19 CA is attached as Exhibit RRL-7.

20 **Q. Please provide additional details concerning the regulatory**
21 **requirements put in place by the 2015 CA.**

22 A. On October 2, 2015 MDC DERM issued a Notice of Violation ("NOV")
23 to FPL for alleged violations of County water quality standards and

1 criteria in groundwater. The 2015 CA resolved that NOV and defined
2 actions that FPL must take to address the NOV. The specific
3 objectives of the CA are: (1) for FPL to demonstrate a statistically valid
4 reduction in salt mass and volumetric extent of the hypersaline water in
5 groundwater west and north of FPL's property without creating adverse
6 environmental impacts; and (2) to reduce the rate of, and as an
7 ultimate goal, arrest migration of hypersaline groundwater. To
8 accomplish these objectives, the CA required FPL to undertake the
9 following:

- 10 • Abatement of the further advancement of the hypersaline plume
11 -- construction and operation of Floridan wells; continued
12 operation of existing marine wells and authorized L-31 Canal
13 pumps)
- 14 • Remediation of the hypersaline groundwater plume north and
15 west of the CCS -- construction and operation of a Biscayne
16 Aquifer Recovery Well System ("RWS")
- 17 • Completion of regional hydrologic improvement projects
- 18 • Additional monitoring and reporting

19
20 The CA provided that FPL periodically work with MDC DERM to
21 determine if these activities were achieving objectives sought by the
22 CA, and if not identify modifications to ensure the ability to achieve the
23 desired objectives. The CA also recognized that factors beyond FPL's

1 control may influence movement of groundwater in the surficial aquifer,
2 and FPL must take into account such factors when developing and
3 implementing remedial actions to minimize the timeframe for achieving
4 compliance with the CA. Upon entering into the CA, MDC DERM
5 withdrew its opposition to the AO.

6 **Q. How were the remaining challenges to the AO resolved?**

7 A. The remaining challenges to the AO led to an administrative hearing in
8 which an administrative law judge issued a recommended order to
9 rescind or modify the AO. In response to that recommended order, the
10 FDEP modified and issued the AO as a Final Administrative Order on
11 April 21, 2016.

12 **Q. Did FPL recently enter into a Consent Order to address a Notice**
13 **of Violation issued by the FDEP concerning conditions in the**
14 **CCS?**

15 A. Yes. Although the FDEP finalized the modified AO, on April 25, 2016,
16 the FDEP issued a NOV regarding the hypersaline groundwater to the
17 west of the CCS and a Warning Letter identifying issues related to
18 water quality in deep artificial channels in four specific areas
19 immediately adjacent to the east and south of the CCS. The NOV
20 directed FPL to enter into consultations to develop a Consent Order
21 ("CO") to, at a minimum, remediate the CCS contribution to the
22 hypersaline plume, reduce the size of the hypersaline plume, and
23 prevent future harm to waters of the State. On June 20, 2016, a CO

1 was executed between FPL and the FDEP. A copy of the CO is
2 attached as Exhibit RRL-8. The CO and FPL's compliance with its
3 requirements incorporate the issues and requirements identified in the
4 Final AO, the NOV, and the Warning Letter. As such, the CO
5 supersedes all requirements of the Final AO and so it rescinds the AO.

6 **Q. What environmental requirements does the CO establish with**
7 **respect to the operation and maintenance of the CCS?**

8 A. The CO establishes several specific environmental regulatory
9 requirements related to the operation and maintenance of the CCS.
10 The primary objectives of the CO are to: (1) cease discharges from the
11 CCS that impair the reasonable and beneficial use of the groundwater
12 west of the CCS; (2) prevent releases of groundwater into deep
13 artificial channels adjacent to the CCS by undertaking restoration
14 projects at Turtle Point and Barge Basin, and; (3) provide mitigation to
15 address historic impact to saltwater intrusion.

16 **Q. Please summarize the new specific requirements required by the**
17 **CO.**

18 A. As set forth in Exhibit RRL-8, the CO requires FPL to take specific
19 actions to meet the following conditions:

- 20 • Reduce and maintain an annual average salinity of the CCS
21 surface waters at or below 34 Practical Salinity Units ("PSU");
 - 22 ○ develop and implement a nutrient management plan that
 - 23 will minimize upset conditions and reduce nutrient

- 1 content in the CCS surface water and proximate
2 groundwater; and
- 3 ○ develop a Thermal Efficiency Plan that will help to
4 maximize heat rejection and minimize CCS average
5 temperature, thus reducing evaporation.
- 6 • Implement a RWS to halt and reduce the size of the hypersaline
7 plume to the limits of FPL Property within 10 years, including
8 additional monitoring of the extent and volume of the
9 hypersaline plume;
- 10 • Provide mitigation for historic impacts;
- 11 • Implement remediation projects in the Barge Basin and Turtle
12 Point to prevent releases of groundwater from the CCS to
13 surface waters connected to Biscayne Bay that result in
14 exceedances of surface water quality standards in Biscayne
15 Bay;
- 16 • Inspect the peripheral levees forming the CCS by an
17 independent entity and repair of any identified material
18 breaches or structural defects, and;
- 19 • Continue existing water quality monitoring and reporting and
20 implement new and more extensive water quality monitoring
21 and reporting.

22 **Q. Is the CO subject to administrative challenge as was the case with**
23 **the AO?**

1 A. Yes. The original deadline for challenges to the CO was July 11, 2016,
2 but the FDEP has extended that deadline to August 5 for Atlantic Civil,
3 Inc. ("ACI"). As of the date I prepared this testimony, no challenges
4 have been filed but it remains possible that ACI will do so. However, if
5 the CO is challenged, there will still be aspects of the MDC DERM CA
6 that will be required to be addressed until such time as the CO
7 challenges have been resolved.

8 **Q. Please summarize the regulatory activity related to the CCS that**
9 **has occurred since the issuance of the CO.**

10 A. On July 12, 2016, the Southern Alliance for Clean Energy ("SACE")
11 and the Tropical Audubon Society, Incorporated ("TAS") filed a citizen
12 suit with the United States District Court Southern District of Florida
13 (Southern District of Florida) alleging that FPL violated the conditions
14 of its NPDES Permit Number FL0001562 with respect to operation of
15 the CCS. The citizen suit seeks to compel FPL to take actions to
16 abate alleged discharges from the CCS, to remediate contamination
17 alleged to have resulted from those discharges, and to mitigate alleged
18 environmental damages; it also seeks to impose civil penalties and to
19 recover SACE's and TAS's litigation costs. MDC DERM and FDEP
20 regulatory requirements reflected in the CA and CO are not affected by
21 the filing of the citizen suit. FPL believes that those regulatory
22 requirements fully address the environmental conditions alleged in the
23 citizen suit, such that the suit is unwarranted and unnecessary. At the

1 time of this filing FPL is reviewing these allegations to determine the
2 appropriate response and/or further action required.

3 **Q. What TPCCMP Project activities does FPL plan to undertake in**
4 **the remainder of 2016?**

5 A. As of the date that I prepared this testimony, FPL cannot be sure
6 whether the CO will be challenged. In the face of this uncertainty, FPL
7 has taken the conservative approach of not forecasting active
8 implementation of regulatory requirements that are driven solely by the
9 CO during the remainder of 2016. However, there is substantial
10 overlap between the requirements of the CO and those of the CA. FPL
11 continues to move forward in 2016 with the implementation of the
12 following TPCCMP projects that are required by the CA:

- 13 • Permitting, construction, implementation activities related to the
14 development of the RWS;
- 15 • Groundwater modeling activities to support the RWS permitting;
- 16 • Permitting, construction, and implementation activities related to
17 new groundwater or surface water monitoring requirements;
- 18 • Activities to comply with required monitoring and reporting;
- 19 • Inspection of the peripheral levees of the CCS to insure
20 integrity, and repairs of any identified issues; and
- 21 • Independent third party review of the Cooling Canal
22 Remediation Project.

23

1 I will also note that FPL may find it necessary to move forward with
2 implementing components of the nutrient management plan required
3 by the CO that are not in the CA, in order to assure that the progress
4 that has been made to date in improving conditions in the canals is not
5 degraded or reversed. In recent years the CCS has experienced algal
6 blooms from species (Cyanobacteria) that can capture nitrogen from
7 the air and bring it into the CCS. To avoid an uncontrolled buildup of
8 nitrogen in the system, FPL may need to implement targeted treatment
9 of those algae species during periods when algae and nutrients are
10 concentrated in the water column. FPL intends to prepare and file a
11 report in September 2016 with the FDEP outlining the potential
12 sources of nutrients found in the CCS and a plan for minimizing
13 nutrient levels in the CCS, which is anticipated to include taking these
14 algal-control steps if they prove necessary.

15 **Q. Does FPL anticipate a variance in 2016 TPCCMP Project costs**
16 **from the amounts that were forecast and approved in the 2015**
17 **ECRC docket?**

18 **A.** Yes. The amount of sediment maintenance performed in 2016 was
19 reduced from original projections because less sediment maintenance
20 was required to meet the first phase thermal efficiency goals. CCS
21 thermal efficiency is currently at historical levels (near 80 percent), thus
22 allowing for deferral of additional sediment maintenance until 2017.

23

1 In addition, because of the water quality gains from natural
2 precipitation and L-31 Canal's excess stormwater transfers to the CCS
3 conducted in 2015, FPL determined that it would not need to apply for
4 permits or implement the intake of additional stormwater from L-31
5 Canal in 2016.

6 **Q. How will FPL ensure that the costs incurred are prudent and**
7 **reasonable?**

8 A. Consistent with our standard practice for all consultant services and
9 procurements, FPL competitively bids all of the activities performed by
10 outside firms to ensure costs are prudently incurred. FPL revises
11 project estimates as specific costs become available through
12 consultant specific bids and costs. FPL will continue to perform due
13 diligence over the life of this project to minimize costs.

14 **Q. Is FPL recovering the costs of these activities through any other**
15 **mechanism?**

16 A. No.

17 **Q. Does FPL expect the CA and CO implementation activities to**
18 **continue in 2017 and beyond?**

19 A. Yes. CA implementation activities will continue into 2017 and beyond.
20 Moreover, FPL expects that, regardless of whether the CO is
21 challenged, it will become final (in existing or modified form) before or
22 during 2017 such that FPL would begin incurring CO implementation
23 activities by 2017 at the latest.

1 Q. Does this conclude your testimony?

2 A. Yes.

EXHIBIT NO. 79

DOCKET NO: 20170007

WITNESS: Sole

PARTY: FPL

DESCRIPTION: Testimony of Randall R. Labauve August 1, 2013 (Excerpt)

DOCUMENTS:

PROFFERED BY: FPL

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **FLORIDA POWER & LIGHT COMPANY**

3 **TESTIMONY OF RANDALL R. LABAUVE**

4 **DOCKET NO. 130007-EI**

5 **AUGUST 1, 2013**

6

7 **Q. Please state your name and address.**

8 A. My name is Randall R. LaBauve and my business address is 700 Universe
9 Boulevard, Juno Beach, Florida 33408.

10 **Q. By whom are you employed and in what capacity?**

11 A. I am employed by Florida Power & Light Company (FPL) as Vice President of
12 Environmental Services.

13 **Q. Have you previously testified in this docket?**

14 A. Yes.

15 **Q. What is the purpose of your testimony in this proceeding?**

16 A. The purpose of my testimony is to present updates to FPL's approved Turkey
17 Point Cooling Canal Monitoring Plan Project and Manatee Temporary Heating
18 System Project at the Cape Canaveral plant.

19 **Q. Have you prepared, or caused to be prepared under your direction,
20 supervision, or control, an exhibit in this proceeding?**

21 A. Yes. I am sponsoring Exhibit RRL-5 – SFWMD's Notice to FPL.

22

23 **Turkey Point Cooling Canal Monitoring Plan (TPCCMP) Project – Update**

24

25 **Q. Please briefly describe the activities that FPL is currently implementing**

1 **in the approved TPCCMP Project.**

2 A. FPL's current activities under the TPCCMP Project, which was approved by
3 Commission Order No. PSC-09-0759-FOF-EI on November 18, 2009, are
4 associated with performing work required pursuant to Conditions IX and X of
5 the Florida Department of Environmental Protection's (FDEP) Final Order
6 Approving Site Certification, filed October 29, 2008. This work consists of
7 water, groundwater and water quality monitoring and ecological monitoring to
8 assess the potential impacts of the Turkey Point Cooling Canal System
9 (CCS), the costs for which are recovered through the TPCCMP Project.

10 **Q. Does FPL expect that it will have to undertake new activities under the**
11 **TPCCMP Project?**

12 A. Yes. FPL recently completed the two (2) years of Pre-Uprate monitoring
13 required under Conditions IX and X mentioned above and has submitted a
14 Comprehensive Pre-Uprate Monitoring Report to the South Florida Water
15 Management District (SFWMD), FDEP and Miami Dade County (collectively
16 the "Agencies") in October, 2012. After reviewing the data provided in the
17 Comprehensive Pre-Uprate Monitoring Report, the Agencies determined that
18 saline water from FPL's CCS has moved westward of the L-31E Levee in
19 excess of those amounts that would have occurred without the existence of
20 the CCS, and has moved into water resources outside the plant's boundaries.
21 On April 16, 2013, the SFWMD provided written notice to FPL, pursuant to
22 paragraph II(D)2 of the Fifth Supplemental Agreement. The Fifth
23 Supplemental Agreement governs the rights and obligations of FPL
24 concerning the construction, operation and monitoring of the CCS. It states
25 that FPL must begin consultation with the SFWMD to identify measures to

1 approximately \$200,000 of capital costs to develop and design the system
2 and to obtain necessary permits to meet the required salinity reduction.
3 Beginning in 2015, FPL expects that new construction activities for
4 compliance with the Agencies' requirements will result in an additional
5 investment of significant capital costs for completion of the project. FPL also
6 anticipates that implementing the plan requirements for mitigating the saline
7 water issue will result in an annual increase of O&M cost in 2015 and beyond,
8 although it is too early to quantify those costs.

9 **Q. How will FPL ensure that the costs incurred for the additional TPCCMP**
10 **Project activities are prudent and reasonable?**

11 A. Consistent with purchasing and procurement practices, FPL will prepare a
12 Scope of Work defining the project and competitively bid the new activities.

13 **Q. Is FPL recovering the costs of these activities through any other**
14 **mechanism?**

15 A. No.

16

17 **Manatee Temporary Heating System (MTHS) Project at Cape Canaveral**
18 **Plant – Update**

19

20 **Q. Now that the Cape Canaveral Next Generation Energy Center (CCEC) is**
21 **in service, does FPL intend to continue maintaining the MTHS as**
22 **operational at this site?**

23 A. Yes.

24 **Q. Please explain why FPL has concluded that the MTHS should remain**
25 **operational at the CCEC.**

EXHIBIT NO. 79

DOCKET NO: 20170007

WITNESS: Sole

PARTY: FPL

DESCRIPTION: Testimony of Randall R. Labauve August 3, 2009

DOCUMENTS:

PROFFERED BY: FPL

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**
2 **FLORIDA POWER & LIGHT COMPANY**
3 **TESTIMONY OF RANDALL R. LABAUVE**
4 **DOCKET NO. 090007-EI**
5 **August 3, 2009**

6
7 **Q. Please state your name and address.**

8 A. My name is Randall R. LaBauve and my business address is 700
9 Universe Boulevard, Juno Beach, Florida 33408.

10 **Q. By whom are you employed and in what capacity?**

11 A. I am employed by Florida Power & Light Company (FPL) as Vice
12 President of Environmental Services.

13 **Q. Have you previously testified in predecessors to this docket?**

14 A. Yes, I have.

15 **Q. What is the purpose of your testimony in this proceeding?**

16 A. The purpose of my testimony is to present for Commission review and
17 approval FPL's plans for a new environmental compliance project, the
18 Turkey Point Cooling Canal Monitoring Plan (the "CCM Plan").

19 **Q. Have you prepared, or caused to be prepared under your**
20 **direction, supervision, or control any exhibits in this proceeding?**

21 A. Yes, I am sponsoring the following exhibits:

- 22 • RRL-1 – Florida Department of Environmental Protection
23 (FDEP) Conditions of Certification (PA 03-45A2) Special
24 Conditions IX and X.

1 • RRL-2 - DRAFT Turkey Point Plant Groundwater, Surface
2 Water, and Ecological Monitoring Plan, dated July 16, 2009
3 • RRL-3 - CCM Plan Objectives and Strategies

4 **Q, Please describe the cooling canal system at the Turkey Point**
5 **Plant.**

6 A. The cooling canal system is a 5,900-acre closed cycle system that is
7 used by Turkey Point Units 1 through 4 for condenser and auxiliary
8 equipment cooling and by Unit 5 to discharge cooling tower blowdown.
9 This closed cycle system does not have a point source discharge
10 directly into Biscayne Bay, and cooling water is constantly recycled
11 through the plant. Some water is lost via evaporation and seepage.
12 Make-up water principally consists of inflows from groundwater
13 beneath the cooling canals and rainwater. As a result of the natural
14 evaporation process, water in the cooling canal system is hypersaline,
15 meaning that it has a high salt content. The cooling canal system is a
16 permitted industrial wastewater facility.

17 **Q. Please describe current monitoring efforts at the Turkey Point**
18 **Plant.**

19 A. In 1972, FPL and the South Florida Water Management District
20 (SFWMD) (previously known as the Central and Southern Florida
21 Flood Control) entered into an agreement that defined the current
22 monitoring efforts for the cooling canal system. Monitoring efforts
23 originally utilized up to 87 monitoring wells. These wells monitored the
24 water in the vicinity of Biscayne Bay and to the west of the cooling

1 canal for temperature and conductivity. Monitoring efforts were scaled
2 back over the years as data being produced and reviewed by
3 regulatory agencies indicated that the operation of the cooling canal
4 system was having no significant impact on the regional environment.
5 The current version of the agreement is the Fourth Supplemental
6 Agreement between FPL and the SFWMD, dated July 15, 1983.
7 Currently, only four groundwater monitoring wells are required to be
8 sampled at quarterly intervals for salinity, temperature and water level.

9
10 FPL also monitors surface water elevations along five transects that
11 measure water levels in the westernmost feeder canal in the cooling
12 canal system, the Interceptor Ditch (ID) and the L-31E Canal as part of
13 the Interceptor Ditch Operations Plan within the Turkey Point Plant.
14 These water levels provide input to the operation of the ID to restrict
15 inland movement of cooling canal water.

16
17 In addition to these monitoring efforts required by the current
18 agreement, other related but independent monitoring efforts are also
19 ongoing. As part of radiological monitoring requirements for the
20 Nuclear Regulatory Commission, the Florida Department of Health
21 Services conducts quarterly to semi-annual monitoring of direct
22 radiation, air particulates, surface water, sediment, fish, crustaceans,
23 groundwater and leafy vegetation. To date, no evidence has been
24 found of any radiological levels of concern.

1 **Q. Please describe the environmental law or regulation requiring the**
2 **CCM Plan.**

3 A. On January 18, 2008, FPL submitted an application for power plant
4 site certification under the Florida Electrical Power Plant Siting Act
5 ("PPSA"), section 403.501 et seq, Florida Statutes for the Turkey Point
6 Uprate Project in Homestead, Florida. On October 29, 2008, the
7 FDEP Siting Office issued the Conditions of Certification (PA 03-
8 45A2). Conditions of Certification IX and X require FPL to develop a
9 monitoring plan for the cooling canal system and the areas
10 surrounding the cooling canal system. Conditions of Certification IX
11 and X are included as Exhibit RRL-1.

12
13 Condition IX, "Biscayne Bay Surface Water Monitoring", which is
14 imposed by the FDEP, requires FPL to submit a monitoring plan within
15 180 days following certification of Units 3 and 4, which will include:

- 16 • specific conductivity (salinity) and temperature monitoring
17 within the surface waters of Biscayne Bay, including the
18 Biscayne Bay Aquatic Preserve;
- 19 • a minimum of five monitoring stations located near shore in the
20 vicinity of the Turkey Point Plant; and
- 21 • specific monitoring locations, sampling frequencies and
22 methods and specific parameters to be monitored.

23 Condition X, "Surface Water, Ground Water, and Ecological
24 Monitoring" sets the framework for new monitoring and, as may be

1 needed, abatement or mitigation measures for approval of FPL's
2 Turkey Point Units 3 and 4 Uprate Application. This condition is
3 imposed by the SFWMD, Miami-Dade Department of Environmental
4 Resources Management (DERM), and the FDEP and requires the
5 establishment of relevant baseline conditions, determination of the
6 extent and effect of the cooling canal system on the surface water,
7 groundwater, and nearby ecological communities, and detection of
8 changes that may occur as a result of the Uprate Project.

9
10 The Conditions of Certification require that the CCM Plan be
11 incorporated into the Fifth Supplemental Agreement and include an
12 assessment of potential impacts to the surface water and groundwater
13 including wetlands, as needed, in the vicinity of the cooling canal
14 system.

15
16 The CCM Plan will collect relevant data which will enable a reasonable
17 assessment of the effects of the cooling canal system and the Uprate
18 Project. The resources where the effects are of highest interest
19 include:

- 20 • fresh groundwater to the west of the cooling canal system,
21 where groundwater supplies are withdrawn;
- 22 • surface water in Biscayne Bay and littoral zone;
- 23 • surface water in adjacent freshwater canals;

- 1 • freshwater wetlands immediately to the west of the cooling
- 2 canal system; and
- 3 • coastal wetlands (mangroves) immediately east of the cooling
- 4 canal system.

5 **Q. Please describe the newly required CCM Plan.**

6 A. On February 18, 2009, pursuant to Conditions IX and X of the FDEP
7 October 29, 2008 Final Order Approving Site Certification, FPL
8 submitted its initial draft of the proposed CCM Plan associated with
9 FPL's Turkey Point Uprate Project to SFWMD. This CCM Plan
10 requires an assessment of baseline conditions to provide information
11 on the vertical and horizontal extent of the hypersaline groundwater
12 plume and the extent and effect of that plume on groundwater and
13 surface water quality, if any. Comments, concerns and requests for
14 revisions or action items have been received from the SFWMD as well
15 as the FDEP, DERM and incorporated into the current draft of the
16 proposed monitoring plan, dated July 16, 2009. The draft CCM Plan is
17 included as Exhibit RRL-2.

18
19 The CCM Plan has not yet been finalized or agreed upon by FPL and
20 the agencies and is therefore subject to change based on input from
21 the agencies. FPL expects the CCM Plan to be approved by mid
22 September 2009.

23

1 The objective of FPL's CCM Plan is to implement the Conditions of
2 Certification IX and X, which state that "the Revised Plan shall be
3 designed to be in concurrence with other existing and ongoing
4 monitoring efforts in the area and shall include but not necessarily be
5 limited to surface water, groundwater and water quality monitoring,
6 and ecological monitoring to:

- 7 • delineate the vertical and horizontal extent of the hypersaline
8 plume that originates from the cooling canal system and to
9 characterize the water quality including salinity and
10 temperature impacts of this plume for the baseline condition;
- 11 • determine the extent and effect of the groundwater plume on
12 surface water quality as a baseline condition; and
- 13 • detect changes in the quantity and quality of surface and
14 groundwater over time due to the cooling canal system
15 associated with the Uprate Project. The Revised Plan shall
16 include installation and monitoring of an appropriate network of
17 wells and surface water stations."

18 **Q. Please describe the proposed activities associated with the CCM**
19 **Plan.**

20 A. The CCM Plan will provide information to determine the extent and
21 effects of the hypersaline cooling canal system water on both surface
22 and groundwater and its potential impacts on Biscayne Bay and the
23 multi-jurisdictional lands around the Turkey Point Plant. The CCM
24 Plan includes monitoring of surface water, groundwater, and

- 1 ecological conditions prior to implementation of Uprate modifications
2 and after implementation of the Uprate Project. Prior to the start-up of
3 the Uprate Project and following implementation of the Uprate Project,
4 data will be collected using monitoring that addresses ground and
5 surface water levels, salinity, temperature, tracer components, tidal
6 influences, preferential groundwater flow paths, surface and ground
7 water quality, rainfall, and associated ecological conditions.
- 8 **Q. Please describe the strategy that FPL will implement to meet the**
9 **objectives of the CCM Plan.**
- 10 A. The CCM Plan has been designed to focus on the objectives as they
11 relate to the cooling canal system and the Uprate Project and those
12 resources that may be affected adjacent to the cooling canal system.
13 Exhibit RRL-3 provides the objectives of the CCM Plan and the
14 strategy FPL will implement to meet the objectives.
- 15 **Q. Please describe the adaptive approach that will be used in the**
16 **CCM Plan.**
- 17 A. To effectively build on the information gained as the monitoring effort
18 progresses, an adaptive approach will be utilized. The intent of the
19 adaptive approach is to facilitate the addition or elimination of
20 sampling so that the most relevant information is collected and
21 analyzed. By remaining flexible, the objectives of the CCM Plan can
22 be more effectively met in a reasonable manner while being fully
23 protective of the environmental resources.
- 24 **Q. How will results of the CCM Plan be reported?**

1 A. Comprehensive monitoring reports will be submitted for
2 documentation of site conditions and activities. The reports will
3 include a summary of the cooling canal system operations and
4 operational changes that result in changes in physical or chemical
5 characteristics of cooling water effluent or flow rates. A description of
6 monitoring activities, station modifications and station operational
7 summaries, and results of surface and groundwater data collection for
8 the period will be included. The reports will also provide analyses of
9 the key findings from the cooling canal system, including any
10 additional characterization and testing, and the surrounding areas as
11 related to the surface, groundwater, and ecological monitoring efforts.
12 The reports will include a completeness evaluation of specific plan
13 objectives and recommendations for adjustments (additions or
14 deletions) to the monitoring program along with rationales. An
15 updated monitoring schedule will be included in the report.
16
17 The reports will be submitted every six months during the pre Uprate
18 period and initially during the post Uprate period. The frequency of
19 report submittals may be allowed to decrease over time pending
20 evaluation of the data and approval by the lead agency.
21
22 The semi-annual reports will typically include four to six months of new
23 data that is assessed in conjunction with previous findings. The
24 annual reports will typically have 10 to 12 months of new data.

1 To facilitate communication and keep the applicable agencies
2 apprised of the monitoring efforts and any significant findings,
3 quarterly meetings will be held. Issues of concern or suggested
4 improvements in the monitoring effort commensurate with focused
5 objectives of the Conditions of Certification should be discussed.

6 **Q. When will FPL begin the CCM Plan?**

7 A. The original date set for completion of negotiations was July 31, 2009,
8 but because the parties were not able to come to an agreement, the
9 completion date has been extended to October 16, 2009. The parties
10 expect to have an approved plan by mid-September; therefore the
11 earliest start date is the middle of September, 2009.

12 **Q. Has FPL estimated the cost of the proposed CCM Plan?**

13 A. Yes. O&M and Capital estimates for the total project are \$7.2 million
14 and \$2.7 million, respectively.

15 **Q. Has FPL estimated its 2009 ECRC recovery amount for the CCM**
16 **Plan?**

17 A. O&M and Capital estimates for 2009 are \$200,000 and \$800,000,
18 respectively. These costs are associated with the purchase of probes,
19 wiring calibrations, flow meters, solar panels and batteries, as well as
20 creating transects for ecological monitoring and a bathymetric survey.
21 These activities may be modified per the approval of the final CCM
22 Plan expected in September, 2009.

23 **Q. Has FPL estimated its 2010 ECRC recovery amount for the CCM**
24 **Plan?**

1 A. O&M and Capital estimates for 2010 are \$3,400,000 and \$1,800,000
2 respectively. These costs are associated with project management,
3 electronic data set-up and management, installation of well clusters,
4 conducting ecological monitoring, instrument maintenance and
5 preparing reports. As mentioned above, required activities may be
6 modified per the approval of the final CCM Plan expected in
7 September, 2009.

8 **Q. How will FPL ensure that the costs incurred are prudent and**
9 **reasonable?**

10 A. FPL will use competitive bidding for this project. FPL maintains a
11 strong market presence allowing it to leverage corporate-wide
12 procurement activities to the specific benefit of individual project
13 procurement activities. Maintaining a relationship with a range of
14 service providers, when available, offers the opportunity to assess
15 capabilities, respond to changing resource loads and remain
16 knowledgeable of current market trends and cost of service.

17 **Q. How is the current monitoring effort at FPL's Turkey Point Plant**
18 **being recovered?**

19 A. Costs associated with the current monitoring efforts at the Turkey
20 Point Plant are being recovered through FPL's current base rates.
21 Costs associated with the current interceptor ditch operation and
22 monitoring of the four remaining wells are approximately \$50,000 per
23 year. The current draft of the CCM Plan calls for the installation of
24 several more monitoring wells and monitoring equipment at various

1 locations in and around the Turkey Point Plant, as well as data
2 collection and reporting. These activities will be incremental to FPL's
3 current monitoring efforts.

4 **Q. Is FPL recovering through any other mechanism the costs for the**
5 **CCM Plan for which it is petitioning for ECRC recovery?**

6 A. No. FPL is only requesting recovery of incremental activities
7 associated the CCM Plan. The costs associated with the current
8 monitoring efforts are not included in FPL's estimates for the CCM
9 Plan.

10 **Q. What are the next steps after the data is gathered and the reports**
11 **are written?**

12 A. If the FDEP, in consultation with SFWMD and DERM, determines that
13 the pre- and post-Uprate monitoring data: (1) is insufficient to evaluate
14 changes as a result of this project; (2) indicates harm or potential harm
15 to the waters of the State including ecological resources; (3) exceeds
16 State or County water quality standards; or (4) is inconsistent with the
17 goals and objectives of the CERP Biscayne Bay Coastal Wetlands
18 Project, then additional measures may be required to evaluate or to
19 abate such impacts. The potential additional measures that might be
20 required include but are not limited to:

- 21 • the development and application of a 3-dimensional coupled
22 surface and groundwater model (density dependent) to further
23 assess impacts of the Uprate Project on ground and surface

1 waters; such model shall be calibrated and verified using the
2 data collection during the monitoring period;
3 • mitigation measures to offset such impacts of the Uprate
4 Project necessary to comply with State and local water quality
5 standards, which may include methods and features to reduce
6 and mitigate salinity increases in groundwater including the use
7 of highly treated reuse water for recharge of the Biscayne
8 aquifer or wetlands rehydration;
9 • operational changes in the cooling canal system to reduce any
10 such impacts; and/or
11 • other measures to abate impacts as may be described in the
12 revised plan.

13 **Q. Does this conclude your testimony?**

14 **A. Yes.**

EXHIBIT NO. 79

DOCKET NO: 20170007

WITNESS: Sole

PARTY: FPL

DESCRIPTION: Testimony of Randall R. Labauve August 31, 2015 (Excerpt)

DOCUMENTS:

PROFFERED BY: FPL

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **FLORIDA POWER & LIGHT COMPANY**

3 **TESTIMONY OF RANDALL R. LABAUVE**

4 **DOCKET NO. 150007-EI**

5 **AUGUST 31, 2015**

6

7 **Q. Please state your name and address.**

8 A. My name is Randall R. LaBauve and my business address is 700
9 Universe Boulevard, Juno Beach, Florida 33408.

10 **Q. By whom are you employed and in what capacity?**

11 A. I am employed by NextEra Energy, Inc. ("NEE") as Vice President of
12 Environmental Services.

13 **Q. Have you previously testified in this docket?**

14 A. Yes.

15 **Q. What is the purpose of your testimony in this proceeding?**

16 A. The purpose of my testimony is to present the Commission with updates
17 on FPL's Greenhouse Gas Reduction ("GHG") Project, an additional
18 activity associated with FPL's Manatee Temporary Heating System
19 Project at the Cape Canaveral Energy Center ("CCEC") and an update to
20 the Turkey Point Cooling Canal Monitoring Plan ("TPCCMP") Project.

21 **Q. Have you prepared or caused to be prepared under your direction,
22 supervision or control an exhibit in this proceeding?**

23 A. Yes. I am sponsoring the following exhibits:

24

1 A. Based on preliminary in-house estimates, FPL believes total O&M costs
2 associated with the relocation of the manatee heating area will be in the
3 \$1.5 million to \$2 million range. FPL plans to retain a contractor via the
4 bid process to design, permit, and implement the relocation of the
5 manatee heating area at the CCEC. FPL anticipates the engineering,
6 construction and relocation will be completed by November 15, 2016 (i.e.
7 the start of the 2016-17 manatee season).

8

9 **Turkey Point Cooling Canal Monitoring Plan Project**

10

11 **Q. What is the current status of FPL's TPCCMP Project?**

12 A. FPL continues to conduct the monitoring and reporting requirements of the
13 TPCCMP, including data collection and publication of periodic reports.
14 Additionally, beginning in 2014 and continuing in 2015, FPL has
15 undertaken activities to deliver new sources of water and remove
16 sediment, both directed at reducing the salinity of the CCS. These
17 activities address salinity reduction requirements in the Administrative
18 Order ("AO") issued by the DEP. During 2015, four water delivery
19 activities are expected to be completed, including the development and
20 installation of three wells east of the CCS (PW-1, SW-1, and SW-2) that
21 will provide additional water to the CCS, and the installation of pumps and
22 pipelines to deliver excess stormwater from the L-31 canal. Sediment
23 removal is being conducted in the CCS, to redistribute the water flow more
24 evenly. Improving the water flow in turn improves the efficiency of the

1 CCS heat exchange, reducing water temperature and hence evaporation
2 rates in the CCS. A lower evaporation rate contributes to lowering salinity,
3 because evaporation concentrates the salt content in the CCS. The
4 sediment removal also improves the hydraulic connection between the
5 CCS and underlying groundwater, supporting the overall salinity reduction
6 effort.

7 **Q. What TPCCMP activities does FPL plan to undertake in 2016?**

8 A. FPL expects to undertake the following TPCCMP activities in 2016:

- 9 • FPL will continue to conduct the monitoring and reporting requirements
10 of the TPCCMP, including data collection and publication of periodic
11 reports.
- 12 • FPL plans to continue to pump water from the three wells completed in
13 2015 and also anticipates being able to receive excess stormwater
14 from the L-31 canal.
- 15 • The permits that allow for the use of the excess stormwater from the L-
16 31 contain a number of requirements that FPL is obligated to execute,
17 including ground and surface water sampling as well as administrative
18 requirements to monitor and document water flow from the L-31 canal,
19 which will need to be addressed in 2016.
- 20 • FPL plans to install the Upper Floridan Aquifer wells at Turkey Point,
21 once the administrative challenge to that work is resolved.
- 22 • FPL plans to continue the CCS sediment removal.

23 **Q. What are FPL's cost projections for these 2016 TPCCMP activities?**

24

1 A. FPL projects that it will incur \$28.0 million in O&M and \$6.8 million in
2 capital costs in 2016.

3 **Q. Does this conclude your testimony?**

4 A. Yes.

2000 WL 1910853 (Fla.P.S.C.)
Slip Copy

Re Tampa Electric Company

Docket No. 001186-EI
PSC-00-2104-PAA-EI

Florida Public Service Commission

November 06, 2000

Before Deason, chairman, and Jacobs, Jr., Jaber, and Baez, commissioners.

BY THE COMMISSION:

*NOTICE OF PROPOSED AGENCY ACTION ORDER GRANTING REQUESTS TO RECOVER COSTS
THROUGH THE ENVIRONMENTAL COST RECOVERY CLAUSE*

I. BACKGROUND

NOTICE is hereby given by the Florida Public Service Commission that the action discussed herein is preliminary in nature and will become final unless a person whose substantial interests are substantially affected files a petition for a formal proceeding pursuant to [Rule 25-22.029, Florida Administrative Code](#).

On August 18, 2000, TECO requested to recover the costs of two environmental programs through the Environmental Cost Recovery Clause (ECRC). The programs are: 1) the Particulate Emission Minimization and Monitoring Program (PM Program); and, 2) the Reduction of Nitrogen Oxide Emissions Program at Big Bend Units 1, 2 and 3 (NO^x Emission Reduction Program). TECO also seeks to include the actual year 2000 expenditures for these programs in the company's 2000 true-up amounts in the ECRC. TECO states that both the PM Program costs and the NO^x Program costs will be allocated to rate classes on an energy basis because the programs are Clean Air Act compliance activities.

The two programs are the result of settlement agreements that TECO entered into with the U.S. Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (DEP). The history and content of the settlement agreements are described below.

The United States Department of Justice, on behalf of the EPA, filed a lawsuit against TECO, on November 3, 1999, alleging TECO violated the Prevention of Significant Deterioration (PSD) requirements at Part C of the Clean Air Act, [42 U.S.C. §§ 7470-7492](#). The EPA claimed that TECO was required to obtain a PSD permit and apply best available control technology (BACT) before proceeding with various power plant modifications which TECO completed between 1991 and 1996. The power plant modifications in question were replacements of boiler equipment such as steam drum internals, high temperature reheater, water wall, cyclone, and furnace floor.

DEP filed a lawsuit against TECO on December 7, 1999, which mirrored the EPA lawsuit. Shortly after DEP filed its lawsuit, TECO and DEP settled the suit by entering a Consent Final Judgment (CFJ). The CFJ became effective on December 16, 1999. The CFJ requires TECO to:

- ☐ Optimize the scrubber on Big Bend Station Units 1&2 to achieve 95% sulfur removal efficiency beginning year 2000.
- ☐ Maximize the availability of both scrubbers at Big Bend Station beginning in year 2000.

- ☐ Repower Gannon Station with natural gas by December 31, 2004.
- ☐ Install Selective Catalytic Reduction technology on the repowered Gannon units to achieve an emission rate for nitrogen oxides (NO^x) of 3.5 parts per million by December 31, 2004.
- ☐ Install retrofit NO^x controls, repower or shut down Big Bend Units 1&2 by the year 2007.
- ☐ Install retrofit NO^x controls, repower or shut down Big Bend Units 3&4 by the year 2010.
- ☐ Spend up to \$8 million to control NO^x emissions with non-ammonia control technology or other combustion controls by December 31, 2004.
- ☐ Perform Best Available Control Technology analysis and optimization of the Big Bend Station electro-static precipitators by the year 2003.
- ☐ Install continuous emission measuring equipment for particulate matter on one Big Bend stack by May 1, 2003.
- ☐ Pay \$2 million into the Tampa Bay Estuary (BRACE) program by year end 2002.
- ☐ Not sell NO^x emission allowances if such allowances are established by state or federal law.

The EPA lawsuit remained unresolved even though TECO and DEP settled. TECO continued negotiations with the EPA to resolve the EPA's concerns. On February 29, 2000, TECO and the EPA signed a settlement agreement (Consent Decree). The Consent Decree was filed with the U.S. District Court in Tampa on February 29, 2000. The notice of the Consent Decree was published in the Federal Register on March 20, 2000, Volume 65, No. 54. The Consent Decree was entered on October 5, 2000.

The Consent Decree includes the requirements of the CFJ, but modifies some of the CFJ compliance dates, provides more explicit instructions than the CFJ and goes beyond the CFJ in three areas. The three additional requirements of the Consent Decree are: a) TECO is prohibited from banking or selling SO² emission allowances; b) TECO is required to pay a one-time civil penalty of \$3.5 million; and, c) TECO is required to spend up to \$9 million on innovative or other combustion controls to reduce NO^x emissions at the Big Bend Station.

Jurisdiction over the subject matter of this petition is vested in the Commission by Section 366.8255, Florida Statutes. Order No. PSC-94-0044-FOF-EI, issued January 12, 1994 in Docket No. 930613-EI, sets forth the criteria the Commission uses to administer [Section 366.8255, Florida Statutes](#). Under the Commission's interpretation of the statute, the Commission must first determine whether the project is eligible for recovery through the ECRC before cost recovery occurs. The Commission also set filing requirements for each petition for new ECRC programs by Order No. PSC-99-2513-FOF-EI, issued December 22, 1999, in Docket No. 990007-EI. Therefore, pursuant to Order No. PSC-94-0044-FOF-EI; Order No. PSC-99-2513-FOF-EI, and [Section 366.8255, Florida Statutes](#), the instant docket was opened to address the eligibility of TECO's PM Program and NO^x Program for recovery through the ECRC.

The criteria used by the Commission to determine if costs are recoverable through the ECRC are in Order No. PSC-94-0044-FOF-EI, as follows:

1. Costs were prudently incurred after April 13, 1993;

2. The activity is legally required to comply with a governmentally imposed environmental regulation enacted, became effective, or whose effect was triggered after the company's last test year upon which rates are based; and,
3. Costs are not recovered through some other cost recovery mechanism or through base rates. (p. 6-7)

Order No. PSC-99-2513-FOF-EI, issued December, 22, 1999, in Docket 990007-EI, incorporated the three ECRC criteria identified above into minimum filing requirements for approval of recovery of new program costs through the ECRC. The minimum filing requirements for an ECRC petition are:

1. Identification of the specific environmental law(s) or regulation(s) requiring the proposed activity or project;
2. A description of the proposed environmental compliance activity;
3. The associated projected environmental compliance costs; and,
4. An adjustment for the level of costs currently being recovered through base rates or other rate-adjustment clauses must be included in the filing. (p. 6)

The eligibility of the PM Monitoring Program for cost recovery through the ECRC is addressed in Part II of this Order. The eligibility of the NO^x Emission Reduction Program for cost recovery through the ECRC is addressed in Part III, of this Order, petition related to cost recovery schedules and rate impacts.

II. PM MONITORING PROGRAM

(1) Identification of the specific environmental law(s) or regulation(s) requiring the proposed activity or project

TECO's petition identifies the PM Program as a specific requirement of the CFJ at Section V.(F) and a specific requirement of the Consent Decree at Paragraph 32.

Paragraph 32(A) of the Consent Decree requires TECO to provide the EPA with a Best Operational Practices (BOP) study to reduce particulate matter emissions at the Big Bend Station. The BOP study must be completed within 12 months of the entry of the Consent Decree. The BOP study will only address operation and maintenance practices to minimize particulate emissions from the existing electrostatic precipitators at Big Bend Station. TECO will have 60 days to implement any changes recommended by the BOP study after the EPA approves TECO's study.

The Consent Decree, at Paragraph 32(B), also requires a BACT analysis addressing any necessary upgrades to the existing electrostatic precipitators at the Big Bend Station to reduce PM emissions. This analysis must be completed within 12 months of the entry of the Consent Decree. The EPA will review TECO's BACT analysis for approval. TECO must implement the recommendations made by the EPA approved BACT analysis by May 1, 2004.

TECO's settlement with the DEP similarly requires TECO to perform a BOP study and a BACT analysis. Section V. (F) of the CFJ requires TECO to implement the BOP study and BACT analysis recommendations by May 1, 2003. The DEP's compliance dates are one year earlier than the EPA's. TECO is planning to meet the more conservative compliance date of May 1, 2003.

Upon consideration of the above, we find that TECO's petition satisfies the minimum filing requirement to identify the specific law requiring TECO to implement the PM Program. In addition, TECO's PM project satisfies the ECRC criterion that the proposed activity was legally required after April 13, 1993.

(2) Description of the proposed environmental compliance activity

The PM Program consists of a BOP study and a BACT analysis. TECO's petition explains that both efforts are directed at improving the availability and efficiency of the existing electrostatic precipitators in removal of dust-sized particles from the flue gases at Big Bend Station. The BOP study will highlight operational changes that will reduce PM emissions while the BACT analysis will focus on upgrading the existing precipitators to further reduce PM emissions. TECO's petition indicates that a second BOP study is expected once the precipitator upgrades recommended by the BACT analysis are completed. However, at this time, TECO is only requesting recovery of the costs for the first BOP study, BOP study implementation, and BACT analysis.

Based on the foregoing analysis, we find that TECO's petition adequately describes the proposed environmental compliance activities as required by the minimum filing requirements. Based on TECO's representation of its actions taken to date, TECO has been prudent with respect to the program.

(3) The associated projected environmental compliance costs

The projected cost for the BOP study is \$125,000. The BOP study is a projected operating and maintenance (O&M) expense for Calendar Year 2000. The BOP study will be performed by the Electric Power Research Institute and the Southern Research Institute. TECO included an estimated cost to implement the BOP study of \$650,000 in O&M expenses and \$105,000 for capital expenditures to be incurred between August 2000 and December 2001.

The BACT analysis will take longer than the BOP study because a BACT analysis often requires inspection of the electrostatic precipitators, and such inspections can only be performed during power plant outages. At this time, TECO's BACT analysis cost estimate only includes efforts at Big Bend Units 1 and 2. BACT analysis at Big Bend Unit 1 is scheduled to begin in November 2000, and at Big Bend Unit 2 in April 2001. The estimated cost for BACT analysis on Big Bend Units 1 and 2 is \$1,325,000 to be incurred between August 2000 and December 2001. The BACT analysis costs will not be expensed, but capitalized. This is a standard practice when engineering analysis efforts directly precede equipment upgrades or replacements.

Based on the foregoing analysis, we find that TECO's petition adequately describes the projected environmental compliance costs as required by the ECRC filing requirements.

(4) An adjustment for the level of costs currently being recovered through base rates or other rate-adjustment clauses must be included in the filing

The purpose of this ECRC criterion is to ensure that the environmental compliance costs are incremental to those used in setting current base rates.

TECO's current base rates were set in Docket No. 920324-EI. That rate case addressed the cost of operating and maintaining the existing electrostatic precipitators at their current level of performance. The requirement to implement the PM Program did not exist when TECO's base rates were last set. Therefore, the PM Program costs were not considered when TECO's base rates were set.

No adjustment for the level of costs currently being recovered through base rates was included in TECO's petition, however, no adjustment is necessary.

Based on TECO's explanation of the PM Program, we find that this activity is legally required to comply with a governmentally imposed environmental regulation which became effective after the last test year upon which current rates are based.

(5) Cost recovery schedules

TECO proposes to allocate the cost of the PM Program to the rate classes on an energy basis because TECO believes the program is a Clean Air Act compliance activity. It was determined in 1994 that costs for Clean Air Act compliance activities should be allocated to rate classes on an energy basis. This has been Commission practice since the guidelines were established in Order No. PSC-94-0393-FOF-EI, issued April 6, 1994, in Docket No. 940042-EI. Such program implementation issues are typically addressed in the ongoing ECRC proceedings. Therefore, it is not necessary to decide this issue at this time.

(6) Conclusions

Based on the foregoing review of TECO's PM Program, application of the ECRC criteria to TECO's PM Program, and the filing requirements for petitioning for recovery of new projects through the ECRC, we find the PM Program eligible for cost recovery through the ECRC.

III. NO^x EMISSION REDUCTION PROGRAM

(1) Identification of the specific environmental law(s) or regulation(s) requiring the proposed activity or project

TECO's petition identifies several NO^x emission reduction related activities required by the DEP and the EPA. TECO clarified that, at this time, the only NO^x activity cost for which it seeks recovery is the NO^x emission reduction program at Big Bend Units 1, 2 and 3. The Consent Decree requires that 'on or before December 31, 2001. Tampa Electric shall submit to the EPA for review and comment a plan to reduce NO^x emissions from Big Bend Units 1, 2 and 3, through the expenditure of up to \$3 million Project Dollars on combustion optimization using commercially available methods, techniques, systems, or equipment, or combinations thereof.' TECO is required to implement the plans on or before December 31, 2002.

We find TECO's NO^x Emission Reduction Program at Big Bend Units 1, 2 and 3 satisfies the ECRC criteria that the proposed activity was legally required after April 13, 1993. TECO's petition satisfies the minimum filing requirement to identify the specific law requiring TECO to implement the NO^x Emission Reduction Program.

(2) Description of the proposed environmental compliance activity

TECO explains that the NO^x Emission Reduction Program consists of two activities. One activity is installation of a neural network system on Big Bend Units 1 and 2. The proposed neural network system is a computerized expert system which will aid NO^x reduction by providing real-time optimization of the coal combustion process inside the boiler. The second activity consists of enhancements to other boiler internal components to reduce NO^x emissions from Big Bend Units 1, 2, and 3. Boiler enhancement activities on Big Bend Units 1 and 2 are projected to be completed by September 2001. These activities are projected to achieve at least a 30% NO^x emission reduction at Big Bend Units 1 and 2 and at least a 15% NO^x emission reduction at Big Bend Unit 3 based on 1998 emissions data. The Consent Decree requires TECO to implement these activities on or before December 31, 2002.

Based on the foregoing analysis, we find that TECO's petition adequately describes the proposed environmental compliance activities as required by the minimum filing requirements. Based on TECO's representation of its actions taken to date, we believe TECO has been prudent with respect to the program.

(3) The associated projected environmental compliance costs

The projected cost for the neural network systems on Big Bend Units 1 and 2 is \$465,000. TECO anticipates soliciting bids for key elements of the expert system, however, TECO's staff will perform much of the engineering. The projected costs for enhancements to the boilers' internal components of Big Bend Units 1 and 2 are \$590,000 in capital and \$50,000 in O&M expenses for boiler tuning. Performing similar retrofits on the Big Bend Unit 3 boiler internals will cost approximately \$300,000.

TECO's petition only addresses the NO^x emission reductions activities at Big Bend Units 1, 2 and 3 pursuant to Paragraph 35 of the Consent Decree as outlined above.

Based on the foregoing analysis, we find that TECO's petition adequately describes the projected environmental compliance costs as required by the minimum filing requirements.

(4) An adjustment for the level of costs currently being recovered through base rates or other rate-adjustment clauses must be included in the filing

The purpose of this ECRC criterion is to ensure that the environmental compliance costs are incremental to those used in setting current base rates.

TECO's current base rates were set in Docket No. 920324-EI. The 1992 rate case did not address the cost of the proposed neural network system and the proposed boiler internal modifications. The requirements to implement the NO^x Program began in Calendar Year 2000. Therefore, the NO^x Emission Reduction Program costs were not considered when TECO's base rates were set.

No adjustment for the level of costs currently being recovered through base rates was included in TECO's petition, however, no adjustment is necessary.

Based on TECO's explanation of the NO^x Emission Reduction Program, this activity is legally required to comply with a governmentally imposed environmental regulation which became effective after the last test year upon which current rates are based.

(5) Cost recovery schedules

Paragraph 22 of TECO's Petition states that TECO proposes to allocate the cost of the NO^x Emission Reduction Program to the rate classes on an energy basis because TECO believes the program is a Clean Air Act compliance activity. It was determined in 1994 that costs for Clean Act Compliance Activities should be allocated to rate classes on an energy basis. This has been Commission practice since the guidelines were established in Order No. PSC-94-0393-FOF-EI, issued April 6, 1994, in Docket No. 940042-EI. Such program implementation issues are typically addressed in the ongoing ECRC proceedings. Therefore, it is not necessary to decided this issue at this time.

(6) Conclusions

Based on the foregoing review of TECO's NO^x Emission Reduction Program, application of the ECRC criteria to the Program, and the filing requirements for petitioning for recovery of new projects through the ECRC, we find that the NO^x Emission Reduction Program is eligible for cost recovery through the ECRC.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that the Petition of Tampa Electric Company for Approval of New Environmental Programs for Cost Recovery Through the Environmental Cost Recovery Clause is granted. It is further

ORDERED that the provisions of this Order, issued as proposed agency action, shall become final and effective upon the issuance of a Consummating Order unless an appropriate petition, in the form provided by [Rule 28-106.201, Florida Administrative Code](#), is received by the Director, Division of Records and Reporting, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on the date set forth in the 'Notice of Further Proceedings' attached hereto. It is further

ORDERED that in the event this Order becomes final, this docket shall be closed.

By ORDER of the Florida Public Service Commission this 6th day of November, 2000. BLANCA S. BAYO, Director
Division of Records and Reporting By: Kay Flynn, Chief Bureau of Records

(SEAL)

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by [Section 120.569\(1\), Florida Statutes](#), to notify parties of any administrative hearing that is available under [Section 120.57, Florida Statutes](#), as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing will be granted or result in the relief sought.

Mediation may be available on a case-by-case basis. If mediation is conducted, it does not affect a substantially interested person's right to a hearing.

The action proposed herein is preliminary in nature. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, in the form provided by [Rule 28-106.201, Florida Administrative Code](#). This petition must be received by the Director, Division of Records and Reporting, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, by the close of business on *November 27, 2000*.

In the absence of such a petition, this order shall become final and effective upon the issuance of a Consummating Order.

Any objection or protest filed in this docket before the issuance date of this order is considered abandoned unless it satisfies the foregoing conditions and is renewed within the specified protest period.

2005 WL 3598119 (Fla.P.S.C.)
Slip Copy

In Re: Environmental Cost Recovery Clause.

050007-EI
PSC-05-1251-FOF-EI

Florida Public Service Commission

December 22, 2005

APPEARANCES: JOHN T. BUTLER, ESQUIRE, Squire, Sanders & Dempsey, LLP, including Steel, Hector & Davis, LLP, 200 S. Biscayne Blvd., Suite 4000, Miami, FL 33131-2398 and R. WADE LITCHFIELD, ESQUIRE, Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408-0420 On behalf of Florida Power & Light Company (FPL) GARY V. PERKO, ESQUIRE, and CAROLYN S. RAEPPLE, ESQUIRE, Hopping, Green & Sams, P.O. Box 6526, Tallahassee, Florida 32314 and R. ALEXANDER GLENN, ESQUIRE, Progress Energy Service Co., LLC, 100 Central Ave., St. Petersburg, FL 33701-3324. On behalf of Progress Energy Florida (PEF) LEE L. WILLIS, ESQUIRE and JAMES D. BEASLEY, ESQUIRE, Ausley & McMullen, P.O. Box 391, Tallahassee, Florida 32302 and ANGELA LLEWELLYN, ESQUIRE, P.O. Box 111, Tampa, FL 33601-0111 On behalf of Tampa Electric Company (TECO) JOHN W. MCWHIRTER, JR., ESQUIRE, McWhirter Reeves & Davidson, P.A., 400 North Tampa Street, Suite 2450, Tampa, Florida 33601-3350, and TIMOTHY J. PERRY, ESQUIRE, McWhirter Reeves & Davidson, P.A., 117 South Gadsden Street, Tallahassee, Florida 32301 On behalf of the Florida Industrial Power Users Group (FIPUG) ROBERT SCHEFFEL WRIGHT, ESQUIRE and JOHN T. LAVIA, III, ESQUIRE, Landers & Parsons, P.A., 310 West College Avenue, Tallahassee, Florida 32301 On behalf of the Florida Retail Federation CHARLES BECK, ESQUIRE AND PATRICIA CHRISTENSEN, ESQUIRE, 111 West Madison Street, Room 812, Tallahassee, Florida 32399-1400 On behalf of the Citizens of the State of Florida (OPC) MARLENE K. STERN, ESQUIRE, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850 On behalf of the Florida Public Service Commission (FPSC)

Before Braulio L. Baez, Chairman, J. Terry Deason, Rudolph "Rudy" Bradley, Lisa Polak Edgar and Isilio Arriaga, Commissioners.

FINAL ORDER APPROVING PROJECTED EXPENDITURES AND TRUE-UP AMOUNTS FOR ENVIRONMENTAL COST RECOVERY FACTORS

BY THE COMMISSION:

I. CASE BACKGROUND

As part of the Commission's ongoing environmental cost recovery proceedings, a hearing was held on November 7, 2005, in this docket. At the hearing, the parties addressed the issues set out in Order No. PSC-05-1107-PHO-EI, the Prehearing Order. Part II of this Order addresses the stipulated generic issues and Part III addresses the contested generic issues. Part IV addresses the stipulated company-specific issues and Part V addresses the contested company-specific issues.

II. STIPULATED GENERIC ENVIRONMENTAL COST RECOVERY ISSUES

A. We approve as reasonable the following final environmental cost recovery true-up amounts for the period ending December 31, 2004:

FPL: \$505,074 over recovery including interest.

PEF: \$5,961,886 over recovery including interest.

TECO:\$35,849 over recovery including interest.

GULF:\$628,050 over recovery including interest.

OPC, FIPUG and FRF took no position.

B. We approve as reasonable the following estimated environmental cost recovery true-up amounts for the period January 2005 through December 2005:

GULF:\$ 646,587 over recovery including interest.

TECO:\$ 101,061,442 over recovery including interest.

OPC, FIPUG and FRF took no position.

C. We approve as reasonable the following projected environmental cost recovery amounts for the period January 2006 through December 2006:

GULF:\$41,572,348.

TECO:\$27,754,796.

OPC, FIPUG and FRF took no position.

D. We approve as reasonable the following environmental cost recovery amounts, including true-up amounts for the period January 2006 through December 2006:

GULF:\$40,326,725 (adjusted for revenue taxes).

TECO:\$73,395,302 adjusted for taxes, to be refunded.

OPC, FIPUG and FRF took no position.

E. We approve as reasonable that the depreciation rates to be used to develop the depreciation expense included in the total environmental cost recovery amounts for the period January 2006 through December 2006 shall be the depreciation rates that are in effect during the period the allowed capital investment is in service.

FIPUG and FRF took no position.

F. We approve as reasonable the following jurisdictional separation factors for the projected period January 2006 through December 2006:

FPL: Energy Jurisdictional factor - 98.553348%; CP Demand Jurisdictional Factor - 98.62224%; GCP Demand Jurisdictional Factor - 100%.

PEF: The energy jurisdictional separation factors are calculated for each month based on retail kWh sales as a percentage of projected total system kWh sales.

Production Demand Jurisdictional Factors

Base 93.753%,

Intermediate 79.046%,

Peaking 88.979%

Transmission Demand Jurisdictional Factor 70.597%

Distribution Demand Jurisdictional Factor 99.597%

TECO: The demand jurisdictional separation factor is 96.41722%. The energy jurisdictional separation factors are calculated for each month based on projected retail kWh sales as a percentage of projected total system kWh sales.

GULF: The demand jurisdictional separation factor is 96.64872%. The energy jurisdictional separation factors are calculated for each month based on projected retail kWh sales as a percentage of projected total system kWh sales.

OPC, FIPUG and FRF took no position.

G. We approve as reasonable the following environmental cost recovery factors for the period January 2006 through December 2006:

TECO:

Rate Class	Factor (cents/k Wh
RS, RST	(0.372)
GS, GST, TS	(0.374)
GSD, GSDT	(0.376)
GSLD, GSLDT, SBF	(0.373)
IS1, IST1, SBI1, SBIT1, IS3, IST3, SBI3	(0.368)
SL,OL	(0.384)
Average Factor	(0.373)

GULF:

RATE CLASS	ENVIRONMENTAL COST RECOVERY FACTORS ¢/k Wh
RS, RSVP	.364
GS	.362
GSD, GSDT, GSTOU	.356

LP, LPT	.346
PX, PXT, RTP, SBS	.337
OS-I/II	.334
OSIII	.345

OPC, FIPUG and FRF took no position.

H. For billing purposes, the new environmental cost recovery factors shall be effective beginning with the first billing cycle for January 2006, and thereafter through the last billing cycle for December 2006. The first billing cycle may start before January 1, 2006, and the last billing cycle may end after December 31, 2006, so long as each customer is billed for twelve months regardless of when the factors became effective.

OPC and FRF took no position.

III. RULINGS ON CONTESTED GENERIC ENVIRONMENTAL COST RECOVERY ISSUES

A. We find that the estimated environmental cost recovery true-up amounts for the period January 2005 through December 2005 shall be:

PEF: \$11,922,307 under-recovery.

FPL: \$4,418,213 over recovery including interest.

B. We find that the projected environmental cost recovery amounts for the period January 2006 through December 2006 shall be:

PEF: \$17,526,546.

FPL: \$31,263,335.

C. We find that the environmental cost recovery amounts, including true-up amounts, for the period January 2006 through December 2006 shall be:

PEF: \$23,503,878 (adjusted for revenue taxes).

FPL: The total environmental cost recovery amount, adjusted for prior period true-ups and revenue taxes, is \$26,359,013.

D. We find that the environmental cost recovery factors for the period January 2006 through December 2006 for each rate group shall be:

PEF:

RATE CLASS	ECRC Factor Cents/k Wh
Residential	0.062

General Service Non-Demand	
@ Secondary Voltage	0.060
@ Primary Voltage	0.059
@ Transmission Voltage	0.059
General Service 100% Load Factor	0.048
General Service Demand	
@ Secondary Voltage	0.056
@ Primary Voltage	0.055
@ Transmission Voltage	0.055
Curtable	
@ Secondary Voltage	0.055
@ Primary Voltage	0.054
@ Transmission Voltage	0.054
Interruptible	
@ Secondary Voltage	0.049
@ Primary Voltage	0.049
@ Transmission Voltage	0.048
Lighting	0.050

FPL:

Rate Class	Environmental Recovery Factor (\$/kWh)
RS-1/RST1	0.00026
GS-1/GST1	0.00025
GSD1/GSDT1/HLFT-1(21-499 kW)	0.00024
OS2	0.00025
GSLD1/GSLDT1/CS1/CST1/HLFT-1 (500-1,999 kW)	0.00024
GSLD2/GSLDT2/CS2/CST2/HLFT-1 (2,000 +)	0.00023
GSLD3/GSLDT3/CS3/CST3	0.00021
ISST1D	0.00022

ISST1T	0.00020
SST1T	0.00020
SST1D1/SST1D2/SST1D3	0.00022
CILC D/CILC G	0.00022
CILC T	0.00021
MET	0.00025
OL1/SL1/PL1	0.00019
SL2/GSCU-1	0.00022

IV. STIPULATED COMPANY SPECIFIC ISSUES

Florida Power & Light (FPL)

A. We approve as reasonable the following stipulation regarding FPL's request for recovery of costs for a 10 year Hydrobiological Monitoring Program associated with FPL's makeup water withdrawals from the Little Manatee River for its Manatee Unit 3 generating unit:

The Hydrobiological Monitoring Program (HBMP) as described in the prepared testimony of FPL witness R.R. LaBauve filed on August 8, 2005 is eligible for recovery through the environmental cost recovery clause. FPL is undertaking the HBMP project to comply with “environmental laws or regulations,” and the costs it seeks to recover for the HBMP project are “environmental compliance costs,” as those terms are used in [§366.8255, Fla. Stat.](#)

OPC, FIPUG and FRF took no position.

B. We approve as reasonable the following stipulation regarding recovery of study costs and costs to retrofit various power plants to comply with the Clean Air Interstate Rule:

The Clean Air Interstate Rule (CAIR) is an “environmental law or regulation” as defined in [Section 366.8255\(1\)\(c\), Florida Statutes](#), and costs spent to comply with the rule are eligible for recovery. It is FPL's burden to show that costs it seeks to recover are for activities required by the rule and that the proposed activities are reasonable in light of the rule, and that the costs it seeks to recover are reasonable and prudent. FPL's proposed preliminary engineering evaluation of all fossil electric generating units, and development of the most cost-effective compliance strategy are required to comply with CAIR at this time and are reasonable, and the projected costs for these studies are reasonable. FPL represents that its testimony regarding the return on investment is associated with tentative capital expenditures for long lead-time equipment for CAIR-related technology. FPL's ECRC filing estimates the 2006 return on such investment to be \$495,164 (see Form 42-4P, page 32 of 38); there are no estimated CAIR-related capital expenditures included in FPL's filing for 2005. FPL's testimony filed in 2005 will be used for purposes of setting the ECRC factors for 2006. FPL will file testimony addressing the results of the ongoing studies and the final State Implementation Plan for CAIR in Docket No. 060007-EI. Any consideration of the prudence and reasonableness of specific technologies and associated project costs is premature and shall be deferred. The deferral shall not prejudice the rights of any party to conduct discovery and challenge the reasonableness and prudence of any projects or associated costs incurred, nor the rights of FPL to seek recovery of such costs. FPL will hold an informal meeting with Staff and parties to the then-current ECRC docket at a mutually agreed time and place each summer until the CAIR compliance deadlines have passed, in order to provide an update on FPL's anticipated CAIR compliance activities.

OPC, FIPUG and FRF took no position.

C. We approve as reasonable the following stipulation regarding allocation of FPL's legal costs to challenge the Clean Air Interstate Rule to the rate classes:

The proposed operating and maintenance costs should be allocated to the rate classes on an energy basis.

OPC, FIPUG and FRF took no position.

D. We approve as reasonable the following stipulation regarding FPL's request for recovery of costs to model potential visibility degradation in any Class 1 Federal Area associated with air emissions from its electric generating units pursuant to the Regional Haze Rule:

The Regional Haze Rule is an “environmental law or regulation” as defined in [Section 366.8255\(1\)\(c\), Florida Statutes](#), and costs spent to comply with the rule are eligible for recovery. It is FPL's burden to show that costs it seeks to recover are for activities required by the rule and that the proposed activities are reasonable in light of the rule, and that the costs it seeks to recover are reasonable and prudent. The modeling described in the testimony of R. R. LaBauve on September 8, 2005, and the associated costs appear to be reasonable and necessary at this time.

OPC, FIPUG and FRF took no position.

E. We approve as reasonable the following stipulation regarding allocation of FPL's environmental costs for modeling potential visibility degradation pursuant to the Regional Haze Rule to the rate classes:

The proposed operating and maintenance costs should be allocated to the rate classes on an energy basis.

OPC, FIPUG and FRF took no position.

Progress Energy Florida (PEF)

F. We approve as reasonable the following stipulation regarding PEF's request for recovery of costs for certain Sea Turtle street lighting activities in Franklin County, Gulf County, and within the City of Mexico Beach:

The costs for the Sea Turtle Lighting Program meet the requirements of [Section 366.8255](#) for recovery through the Environmental Cost Recovery Clause.

OPC, FIPUG and FRF took no position.

G. We approve as reasonable the following stipulation regarding allocation of the costs for PEF's Sea Turtle street lighting activities to the rate classes:

The operating and maintenance costs and capitalized costs for the Sea Turtle Lighting Program should be allocated to the rate classes on a non-coincident peak demand basis.

OPC, FIPUG and FRF took no position.

H. We approve as reasonable the following stipulation regarding PEF's request for recovery of costs to assess groundwater arsenic levels and consultant costs for development of an arsenic remediation plan at Plants Anclote, Bartow, Hines, and Crystal River:

The costs for Arsenic Groundwater Standard Program meet the requirements of [Section 366.8255](#) for recovery through the Environmental Cost Recovery Clause.

OPC, FIPUG and FRF took no position.

I. We approve as reasonable the following stipulation regarding PEF's request for recovery of costs for installing secondary containment for certain underground storage tanks and small diameter piping at the Bartow and Crystal River Power Plant sites:

The costs for the Underground Storage Tank Program meet the requirements of [Section 366.8255](#) for recovery through the Environmental Cost Recovery Clause.

OPC, FIPUG and FRF took no position.

J. We approve as reasonable the following stipulation regarding recovery of costs associated with planning and construction of SCR and FGD on four Crystal River coal fired units, and recovery of costs associated with installation of low NOx burners and overfire air at Anclote:

PEF represents that the testimony of Patricia Q. West filed on September 8, 2005, regarding the costs associated with certain pollution control projects that PEF tentatively has identified as part of its strategy for complying with the Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR), was based on a preliminary analysis of compliance options based on the language of CAIR as originally proposed, and was submitted for informational purposes. PEF is presently conducting a more detailed analysis of options based on final CAIR rule language. PEF intends to file testimony addressing the results of the more detailed study and its effect on PEF's compliance strategy in Docket No. 060007 when it has completed the analysis. PEF and OPC agree that Issues 10(G) and 10(H)¹ and any consideration of the prudence and reasonableness of specific technologies and associated project costs related to PEF's CAIR/CAMR activities are premature and shall be deferred. The deferral shall not prejudice the rights of OPC and other parties to conduct discovery and challenge the reasonableness or prudence of any projects or associated costs related to PEF's CAIR/CAMR compliance strategy in future proceedings. Ms. West's testimony shall be entered in the record, but receipt thereof shall not be considered as the Commission's approval of the reasonableness and prudence of PEF's CAIR and CAMR compliance projects. PEF, OPC and any interested intervenors will attempt cooperatively to develop and submit for approval a procedure and schedule designed to govern proceedings on PEF's additional submission. In the event parties cannot agree on appropriate procedural milestones, by motion any party may ask the Commission to establish such a schedule.

¹ Issue 10(G) is: Should the Commission approve recovery of costs associated with planning and construction of SCR and FGD on four Crystal River coal fired units?
Issue 10(H) is: Should the Commission approve recovery of costs associated with installation of low NOx burners and overfire air at Anclote?

Gulf Power Company

K. We approve as reasonable the following stipulation regarding GULF's request for recovery of costs for groundwater arsenic remediation activities at Plants Crist and Scholz:

The FDEP published a new arsenic groundwater standard that lowered the limit from 0.5 mg/L to 0.01 mg/L, effective January 1, 2005. Historical groundwater monitoring data from Plant Crist and Plant Scholz indicate that these facilities are not likely to be able to comply with the lower standard without remediation or other solutions. GULF projects capital expenditures of \$500,000 during 2006 to complete and evaluate the results from studies to determine the nature of the potential impacts to groundwater and identify solutions necessary to ensure compliance with the new standard. Depending on the results, mitigation measures may also be implemented during 2006. These are costs incurred to comply with new environmental legal requirements imposed on the Company and this compliance activity is not being recovered through base rates or any other means.

OPC, FIPUG and FRF took no position.

L. We approve as reasonable the following stipulation regarding allocation of the costs for GULF's arsenic groundwater remediation activities at Plants Crist and Scholz to the rate classes:

The proposed capitalized costs should be allocated to the rate classes on 12 coincident peak demand and 1/13 average demand basis.

OPC took no position.

M. We approve as reasonable the following stipulation regarding GULF's request for recovery of costs for water conservation measures at Plant Crist:

This program is part of GULF's water conservation and consumptive use efficiency program required by the consumptive water use permit issued to GULF for Plant Crist by the Northwest Florida Water Management District (NFWFMD). GULF plans to install automatic level controls on the fire water tanks at Plant Crist to reduce groundwater consumption by an estimated 1.3 million gallons per year. The NFWFMD has agreed that this plan is a valid project to pursue for continued implementation of the water conservation effort as required by the consumptive use permit. The costs associated with this project are being incurred to comply with new environmental legal requirements imposed on the Company and this compliance activity is not being recovered through base rates or any other means.

OPC, FIPUG and FRF took no position.

N. We approve as reasonable the following stipulation regarding allocation of the costs for GULF's Plant Crist water conservation measures to the rate classes:

The proposed capitalized costs should be allocated to the rate classes on 12 coincident peak demand and 1/13 average demand basis.

OPC took no position.

O. We approve as reasonable the following stipulation regarding GULF's request for recovery of costs for replacement of the copper condenser tubes at Plant Crist with stainless steel condenser tubes:

The water quality based copper effluent limitations included in Chapter 62, Part 302, Florida Administrative Code, were amended in April 2002 with an effective date of May 2002 to create a more stringent hardness based standard. The more stringent standard has been included by reference in the industrial wastewater permit issued to GULF for Plant Crist. Surface water studies conducted from 2003 through 2005 have determined that the Crist Unit 6 condenser is the main source of the incremental copper increase in the Plant Crist discharge. GULF plans to install stainless steel condenser

tubes on Crist Unit 6 to eliminate this source of copper in the plant's discharge canal in order to meet the new water quality standard. The new tubes are expected to be placed in service during May 2006 with estimated project expenditures totaling \$5.5 million. These are costs incurred to comply with new environmental legal requirements imposed on the Company and this compliance activity is not being recovered through base rates or any other means.

OPC, FIPUG and FRF took no position.

P. We approve as reasonable the following stipulation regarding allocation of the costs for GULF's Plant Crist condenser tube replacement to the rate classes:

The proposed capitalized costs should be allocated to the rate classes on 12 coincident peak demand and 1/13 average demand basis.

OPC and FRF took no position.

Q. We approve as reasonable the following stipulation regarding recovery of costs associated with planning and construction of the proposed Scrubber Project at Plant Crist, and recovery of costs associated with planning and construction of the proposed baghouse project at Smith Unit 2.

The Scrubber Project (Line Item 1.26) discussed in Issue 11G² and the Plant Smith Baghouse Project (Line Item 1.27) discussed in Issue 11H³ are proposed as additions to Gulf's Air Quality programs in order for Gulf to comply with new environmental regulations, including the EPA's Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR), as described in the testimony of Gulf's witness James O. Vick filed on September 15, 2005. CAIR and CAMR are "environmental regulations" as defined in [Section 366.8255\(1\)\(c\)](#), and costs incurred to comply with these rules are eligible for recovery through the Environmental Cost Recovery Clause. The Scrubber Project and the Baghouse Project are capital projects of such magnitude in dollars and construction time that the Commission's policy regarding AFUDC is applicable. As a result, there is no dollar impact on the ECRC factors for 2006 from these programs. Any money actually spent on these projects in 2006 will be capitalized along with the applicable AFUDC and will be reflected in the proposed ECRC factors for the year when the projects are expected to close to plant-in-service. Although the EPA's CAIR and CAMR are subject to on-going rule challenges which may change the need for the proposed action, at this time the effective date of the rules as promulgated by the EPA have not been stayed. The FDEP has not yet adopted its rules implementing CAIR/CAMR at the state level, but is expected to do so during 2006. As a result, Gulf's decisions regarding the appropriate strategy for CAIR/CAMR compliance are still subject to review. For this reason, Issues 11G and 11H and any consideration of the prudence and reasonableness of specific technologies and associated project costs related to Gulf's CAIR/CAMR activities, including the costs to implement these projects during 2006, shall be deferred to later proceedings in this ongoing docket after Gulf has finalized its decisions regarding these two projects and has submitted additional testimony supporting its choice of CAIR/CAMR compliance options. The deferral of these issues shall not prejudice the rights of Gulf or any parties to this docket with respect to the projects identified in these issues. The deferral shall not be construed as a restriction on Gulf's ability to spend money during 2006 on these projects that are intended for future recovery through the ECRC mechanism and such money shall remain eligible for ECRC recovery subject to future reasonableness and prudence review by the Commission following the filing of Gulf's additional evidence regarding its final compliance strategy. Likewise, the deferral shall not prejudice the rights of OPC and other parties to conduct discovery and possibly challenge the reasonableness or prudence of any projects or associated costs related to Gulf's CAIR/CAMR compliance strategy in such future proceedings. Mr. Vick's testimony shall be entered in the record, but receipt thereof shall not be considered as the Commission's approval of the reasonableness and prudence of Gulf's CAIR and CAMR compliance projects.

- 2 Issue 11(G) is: Should the Commission approve recovery of costs associated with planning and construction of the proposed scrubber project at Plant Crist?
- 3 Issue 11(H) is: Should the Commission approve recovery of costs associated with planning and construction of the proposed baghouse project at Smith Unit 2?
- FIPUG and FRF took no position.

V. RULINGS ON CONTESTED COMPANY SPECIFIC ENVIRONMENTAL COST RECOVERY ISSUES

Florida Power & Light (FPL)

A. Allocation of FPL's environmental costs for the Little Manatee River Hydrobiological Monitoring Program to the rate classes.

We find that the proposed O&M costs for the HBMP Program shall be allocated to the rate classes on a 12 coincident peak demand basis. It is not appropriate to address the issue of non-firm credits in this docket. No evidence has been presented that the currently existing non-firm credits are inappropriate or that additional non-firm credits in this docket are appropriate.

B. Allocation of FPL's environmental costs for compliance with the Clean Air Interstate Rule to the rate classes.

We find that the operating and maintenance costs shall be allocated to the rate classes on an energy basis. The capitalized costs should be allocated to the rate classes on a 12 coincident peak demand and 1/13 energy basis consistent with Commission Order No. PSC-05-0902-S-EI, issued September 14, 2005, in Docket No. 050045-EI, In Re: Petition for rate increase by Florida Power & Light Company. It is not appropriate to address the issue of non-firm credits in this docket. No evidence has been presented that the currently existing non-firm credits are inappropriate or that additional non-firm credits in this docket are appropriate.

C. Recovery of FPL's legal costs to challenge the Clean Air Interstate Rule.

We find that the definition of environmental compliance costs in [Section 366.8255, Florida Statutes](#), includes prudently incurred litigation costs associated with FPL's complying with the Clean Air Interstate Rule. The costs of compliance with a rule and the cost of litigating the legitimacy of a rule are closely linked. To comply with a rule, the utility must understand the rule, and whether the rule is consistent with the statute under which it was adopted. If there is a legitimate argument that the rule is not consistent with the statute being implemented then the utility may recover the costs of challenging the rule through the ECRC.

FPL shall be allowed to recover the reasonable litigation costs (estimated at \$170,000), incurred in 2005 and 2006, associated with compliance with the Clean Air Interstate Rule, contingent upon a review of whether such costs are included in base rates. All efforts shall be made to answer this question by next year's hearing.

Progress Energy Florida, Inc. (PEF)

D. Allocation of the costs for PEF's arsenic groundwater monitoring and studies to the rate classes.

We find that PEF's operating and maintenance costs for its Arsenic Groundwater Standard Program shall be allocated to the rate classes on a 12 coincident peak demand and 1/13 average demand basis. It is not appropriate to address the

issue of non-firm credits in this docket. No evidence has been presented that the currently existing non-firm credits are inappropriate or that additional non-firm credits in this docket are appropriate.

E. Allocation of the costs for PEF's secondary containment facilities at the Bartow and Crystal River Power Plant sites to the rate classes.

We find that the capitalized costs for PEF's Underground Storage Tank Program shall be allocated to the rate classes on a 12 coincident peak demand and 1/13 average demand basis. It is not appropriate to address the issue of non-firm credits in this docket. No evidence has been presented that the currently existing non-firm credits are inappropriate or that additional non-firm credits in this docket are appropriate.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that that the stipulations and findings set forth in the body of this order are hereby approved. It is further

ORDERED that each utility that was a party to this docket shall abide by the stipulations and findings herein which are applicable to it. It is further

ORDERED that the utilities named herein are authorized to collect the environmental cost recovery amounts and use the factors approved herein beginning with the specified environmental cost recovery cycle and thereafter for the period of January 2006 through December 2006. Billing cycles may start before January 1, 2006, and the last cycle may be read after December 31, 2006, so that each customer is billed for 12 months regardless of when the adjustment factor became effective.

By ORDER of the Florida Public Service Commission this 22nd day of December, 2005.

BLANCA S. BAYÓ, Director Division of the Commission Clerk and Administrative Services

(SEAL)

Dissent

Commissioner Lisa Polack Edgar dissents from the Commission's decision with the following opinion.

I agree with the Commission's decision that [Section 366.8255, Florida Statutes](#), gives the Commission the authority to consider prudently incurred litigation expenses for recovery as part of environmental compliance costs. This decision recognizes that legal costs may necessarily be incurred as part of rulemaking, modeling, and other costs associated with compliance. I disagree, however, with the majority's decision to allow FPL to currently recover an estimated \$170,000 of legal costs subject to a future review for two reasons.

First, I do not agree with allowing current recovery of costs that may already be recovered through base rates. Litigation and compliance expenses are on-going costs of utility operations and some allowance for recovery of such costs is included when establishing base rates. More certain information as to base rate recovery should be available to the Commission before cost recovery is approved. I do not believe any financial harm to the utility would result from delaying recovery of these litigation costs until the base rate recovery threshold question is answered. Second, statutory allowance to request reimbursement of certain costs grants the applicant with the option to submit such a request for Commission review. In this instance, the litigation costs of \$170,000 requested by FPL are de minimus to a utility of FPL's size. Time, money and resources utilized in making and reviewing this request could have been better spent.

For these reasons, I dissent from the majority's decision to allow FPL to recover \$170,000, contingent upon a review as to whether any or all of that amount is part of base rate recovery.

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by [Section 120.569\(1\), Florida Statutes](#), to notify parties of any administrative hearing or judicial review of Commission orders that is available under [Sections 120.57 or 120.68, Florida Statutes](#), as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Director, Division of the Commission Clerk and Administrative Services, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by [Rule 25-22.060, Florida Administrative Code](#); or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Director, Division of the Commission Clerk and Administrative Services and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to [Rule 9.110, Florida Rules of Appellate Procedure](#). The notice of appeal must be in the form specified in [Rule 9.900\(a\), Florida Rules of Appellate Procedure](#).

End of Document

© 2018 Thomson Reuters. No claim to original U.S. Government Works.

2007 WL 1774415 (Fla.P.S.C.)
Slip Copy

In Re: Petition for Approval of New Environmental Program for Cost Recovery
Through Environmental Cost Recovery Clause by Tampa Electric Company.

050958-EI
PSC-07-0499-FOF-EI

Florida Public Service Commission

June 11, 2007

Before Lisa Polak Edgar, Chairman, Matthew M. Carter II and Katrina J. McMurrian, Commissioners.

ORDER APPROVING NEW ENVIRONMENTAL PROGRAM FOR COST RECOVERY THROUGH THE
ENVIRONMENTAL COST RECOVERY CLAUSE

BY THE COMMISSION:

BACKGROUND

*1 On December 27, 2005, Tampa Electric Company (TECO or Company) petitioned for cost recovery through the Environmental Cost Recovery Clause (ECRC) of the costs associated with a program entitled “Big Bend Flue Gas Desulphurization System Reliability Program” (FGD Reliability Program) for improved reliability of the flue gas desulphurization systems (scrubbers) on Big Bend Units 1, 2, and 3.

TECO asserts that the program was designed to comply with its Consent Decree with the United States Environmental Protection Agency (EPA) issued February 29, 2000, which memorializes the settlement of the EPA's complaint regarding TECO's Big Bend Units' compliance with the Clean Air Act. Pursuant to the terms of the Consent Decree, on August 19, 2004, TECO submitted a letter to the EPA indicating that the Big Bend Station would continue to combust coal. This declaration triggered paragraph 40 of the Consent Decree. Under the requirements set forth in sections B and C of Paragraph 40, TECO cannot operate its base load coal plants at Big Bend without scrubbers after 2010 (for Big Bend Unit 3) and 2013 (for Big Bend Units 1 and 2). Sections B and C of Paragraph 40 are as follows:

B. Availability Criteria. Commencing on the deadlines set in this Paragraph and continuing thereafter, Tampa Electric shall not allow emissions of SO₂ from Big Bend Units 1, 2, or 3 without scrubbing the flue gas from those Units and using other equipment designed to control SO₂ emissions. Notwithstanding the preceding sentence, to the extent that the Clean Air Act New Source Performance Standards identify circumstances during which Bend Unit 4 may operate without its scrubber, this Consent Decree shall allow Big Bend Units 1, 2, and/or 3 to operate when those same circumstances are present at Big Bend Units 1, 2, and/or 3.

C. Deadlines. Big Bend Unit 3 and the scrubber(s) serving it shall be subject to the requirements of this Paragraph beginning January 1, 2010 and continuing thereafter. Until January 1, 2010, Tampa Electric shall control SO₂ emissions from Unit 3 as required by Paragraphs 30 and 31. Big Bend Units 1 and 2 and the scrubber(s) serving them shall be subject to the requirements of this Paragraph beginning January 1, 2013 and continuing thereafter. Until January 1, 2013, Tampa Electric shall control SO₂ emissions from Units 1 and 2 as required by Paragraphs 29 and 31.

[Section 366.8255, Florida Statutes](#), authorizes the Commission to review and decide whether a utility's environmental compliance costs are recoverable through an environmental cost recovery factor. Electric utilities may petition the Commission to recover projected environmental compliance costs required by environmental laws or regulations, and not included in base rates or other cost recovery clauses. Environmental laws or regulations include “all federal, state, or local

statutes, administrative regulations, orders, ordinances, resolutions, or other requirements that apply to electric utilities and are designed to protect the environment.” [Section 366.8255\(1\)\(c\), Florida Statutes](#). A utility may submit a petition to the Commission describing its proposed environmental compliance activities and projected costs, and if the activities are approved, the Commission “shall allow recovery of the utility's prudently incurred environmental compliance costs, including the costs incurred in compliance with the Clean Air Act, and any amendments thereto or any change in the application or enforcement thereof. . . .” [Section 366.8255\(2\), Florida Statutes](#).

***2** The Commission approved the FGD Reliability Program as eligible for recovery through the Environmental Cost Recovery Clause (ECRC) by Order No. PSC-06-0602-PAA-EI, issued July 10, 2006. The Commission found that the proposed program met the eligibility criteria for ECRC recovery prescribed by [section 366.8255, Florida Statutes](#). The Commission said:

We find that the costs associated with TECO's proposed program to improve the reliability of the scrubbers at Big Bend are eligible for recovery through the ECRC as environmental compliance costs, ‘incurred in compliance with the Clean Air Act, and any amendments thereto or any change in the application or enforcement thereof.’

Thereafter, on July 21, 2006, the Office of Public Counsel (OPC) filed a Petition on Proposed Agency Action objecting to the Commission's PAA order and requesting a formal administrative hearing on the matter. Accordingly, a hearing was conducted on March 5, 2007, at which OPC contested the ECRC eligibility of four individual projects in TECO's proposed FGD Reliability Program. Those projects were: the Big Bend Units 1-4 Electric Isolation Project; the Big Bend Units 3-4 Split Inlet Duct and Split Outlet Duct Projects and; the Gypsum fines filter project. The parties stipulated that the costs of the remaining FGD Reliability Projects should be recovered through the ECRC or through base rates as TECO had proposed. Following the hearing, each party filed a post-hearing brief and statement of issues and positions. For the reasons explained below, we confirm our prior PAA order and approve all of the prudently incurred costs associated with TECO's proposed FGD Reliability Program as eligible for cost recovery through the ECRC, with the exception of those costs TECO has proposed be recovered through base rates. We find that approval of these projects as eligible for cost recovery through the ECRC is consistent with the ECRC statute and in the public interest. We have jurisdiction to address this matter by [section 366.8255, Florida Statutes](#).

DECISION

OPC's Position

OPC claims that the electric isolation project for Big Bend Units 1-4 is not eligible for recovery thorough the ECRC because it is not required to meet an environmental law or regulation. OPC states that the main function of the proposed electric isolation project is to provide a new transformer for the Induced Draft fans serving the boiler system, which OPC asserts is not an environmental system.

With respect to the Big Bend Units 3-4 split inlet duct and outlet duct projects, OPC asserts that they are also not eligible for recovery through the ECRC because they are not required to comply with an environmental law or regulation. OPC claims that the scrubber system's original combined duct system design, without the splitting of the inlet and outlet ducts, meets current environmental law, and therefore the split inlet duct and outlet duct projects are discretionary projects not entitled to special recovery treatment.

***3** Finally, OPC contends that the gypsum fines filter project is discretionary and not entitled to recovery through the ECRC because it is not required to comply with an environmental law or regulation. According to OPC, the gypsum fines filter project is designed to make a saleable by-product and reduce landfill costs. The costs associated with the project are not being incurred to comply with an environmental law or regulation.

OPC bases its position with respect to the four projects in contention on the policy arguments presented by Witness Merchant. Witness Merchant raised a concern over the potential double recovery of normal base rate type costs if eligibility for recovery through the ECRC is not strictly construed. Ms. Merchant relied on a portion of Order No. 94-0044-FOF-EI, issued January 12, 1994, in Docket No. 930613-EI,¹ where the Commission found that a research and development project implemented at the utility's discretion was not necessary to comply with any governmentally imposed environmental compliance mandate, and thus was not eligible for ECRC recovery, notwithstanding the desirability of the project. OPC contends that for a project to be eligible for cost recovery through the ECRC, it must be necessary to comply with a new environmental requirement, and it cannot be discretionary.

¹ In re: Petition to establish an environmental cost recovery clause pursuant to Section 366.0825, Florida Statutes, by Gulf Power Company.

OPC's Witness Hewson argues that the requirement in Paragraph 40 of the Consent Decree is not new or different from TECO's existing FGD (scrubber) optimization plans. OPC witnesses Hewson and Stamberg argue that these projects are discretionary and not necessary for scrubber reliability improvement. For the electric isolation project, they argue that the Induced Draft (ID) fans, which will be served by the new transformer 3B, are not dedicated to the scrubber system and the proposed transformer project will have no measurable effect on the reliability of the scrubber system. For the split inlet duct and outlet duct projects, they argue that these projects have no significant impact on system reliability based on the scrubber system operational history. For the gypsum fines filter project, they argue that the project is a revamping of the gypsum disposal system to make a saleable byproduct and reduce landfill costs. In addition, OPC offers TECO's Quarterly Compliance Report to the EPA regarding activities related to its Consent Decree compliance as further evidence that some of the projects are not required.

TECO's Position

TECO's basic position is that each of the contested projects, the Big Bend Units 1-4 Electric Isolation Project, the Big Bend Units 3-4 Split Inlet Duct and Split Outlet Duct Projects, and the Gypsum fines filter project is necessary to comply with environmental laws and regulations and therefore is entitled to be recovered through the Environmental Cost Recovery Clause pursuant to [Section 366.8255, Florida Statutes](#).

*4 TECO's three witnesses testified that the FGD Reliability Program would not be needed and would not be implemented but for the requirements of its Consent Decree with the EPA. TECO argues that the testimony of OPC's witnesses is fundamentally deficient because they fail to recognize the significant differences in permissible operating parameters before and after the 2010 and 2013 Consent Decree deadlines. Mr. Smolenski explained the reasons why the requirements of the Consent Decree tie unit generating capability to FGD system reliability. He asserts that Mr. Stamberg's analysis of the individual projects making up the FGD Reliability Program contains errors, exemplified in Mr. Stamberg's analysis of the electrical isolation project in which he completely overlooks the fact that this project is designed to avoid scrubber outages that are allowable prior to the 2010 and 2013 deadlines, but which will cause multiple coal-fired unit outages after those deadlines pass.

TECO's rebuttal witness Crouch addresses Mr. Hewson's conclusion that TECO's quarterly reports to the EPA suggest that those projects are not needed to comply with the Consent Decree. She contends that Mr. Hewson's analysis is flawed because he confuses TECO's new program undertaken pursuant to Paragraph 40 of the Consent Decree with the existing optimization plan that was undertaken pursuant to Paragraph 31 of the Consent Decree. Paragraph 31 is entitled Optimizing Availability of Scrubbers Serving Big Bend Units 1, 2, and 3. Subsection A provides:

As soon as possible after entry of this Consent Decree, Tampa Electric shall submit to EPA for review and approval a plan addressing all operation and maintenance changes to be made that would maximize the availability of the existing scrubbers treating emissions of SO₂ from Big Bend Units 1

and 2, and from Unit 3. In order to improve operations and maintenance practices as soon as possible, Tampa Electric may submit the plan in two phases.

Witness Crouch also argues that Mr. Hewson is not correct in concluding that Tampa Electric's inclusion of the projects as additional capital projects in its quarterly reports to the EPA suggests that those projects were not required by the Consent Decree. She explained that TECO's approach was to err on the side of reporting compliance projects and major capital projects in the quarterly reports in order to obtain protection from further EPA litigation under Paragraph 44 of the Consent Decree, the "safe harbor" provision entitled "Resolution of Future Claims — Covenant not to Sue." In any event, Witness Crouch argues, the wording of the reports does not change the nature of the projects, which would not have been undertaken but for the requirements of Paragraph 40.

In its brief, TECO explains that the Consent Decree does not mandate a particular engineering solution to comply with the strict operational requirements of Paragraph 40. Therefore, TECO contends, it has the discretion to design a program that will reasonably and cost-effectively comply with the environmental requirement that the Big Bend units may not operate unscrubbed after 2010 and 2014. TECO argues that this position is consistent with the decision the Commission reached in Order No. PSC-02-1421-PAA-EI, issued October 17, 2002, in Docket No. 020648-EI, In re: Petition for approval of environmental cost recovery of St. Lucie Turtle Net Project for period of 4/15/02 through 12/31/02 by Florida Power & Light Company. (Turtle Order) In that Order, the Commission allowed recovery of activities related to the installation of a turtle net that were not specifically mentioned in the environmental regulation requiring the net, but were designed to allow the net to operate effectively. TECO states in its brief:

*5 [T]he Consent Decree imposes deadlines in 2010 and 2013 after which Tampa Electric will no longer be able to operate Big Bend Units 1 through 3 unscrubbed. The Consent Decree, like FPL's NRC license, does not presume to prescribe a list of compliance projects to accomplish this mandate. Instead, the Consent Decree leaves it up to Tampa Electric to determine and implement the best means of complying with the deadlines and, at the same time, discharging its statutory obligation to continue providing safe, adequate, reliable and reasonably priced electric service to its customers.

Discussion

As stated above, [section 366.8255, Florida Statutes](#), authorizes the Commission to review and decide whether a utility's environmental compliance costs are recoverable through an environmental cost recovery factor. Electric utilities may petition to recover projected environmental compliance costs, required by environmental laws or regulations, not included in base rates or other cost recovery clauses. Environmental laws or regulations include "all federal, state, or local statutes, administrative regulations, orders, ordinances, resolutions, or other requirements that apply to electric utilities and are designed to protect the environment." [Section 366.8255\(1\)\(c\), Florida Statutes](#). A utility may submit a petition describing its proposed environmental compliance activities and projected costs, and if the activities are approved, the Commission "shall allow recovery of the utility's prudently incurred environmental compliance costs, including the costs incurred in compliance with the Clean Air Act, and any amendments thereto or any change in the application or enforcement thereof. . . ." [Section 366.8255\(2\), Florida Statutes](#).

The Commission first implemented the provisions of [section 366.8255](#) by Order No. PSC-94-0044-FOF-EI, issued January 12, 1994, in Docket No. 930613-EI, In re: Petition to establish an environmental cost recovery clause pursuant to [Section 366.8255, Florida Statutes](#) (Gulf Order). There the Commission identified the criteria required to demonstrate eligibility for cost recovery under the ECRC. The Commission said:

Upon petition, we shall allow the recovery of costs associated with an environmental compliance activity if:

1. such costs were prudently incurred after April 13, 1993;

2. the activity is legally required to comply with a governmentally imposed environmental regulation enacted, became effective, or whose effect was triggered after the company's last test year upon which rates are based; and,
3. such costs are not recovered through some other cost recovery mechanism or through base rates.

*6 The Gulf Order also included other findings that are relevant to the decision we make in this case. The Gulf Order allowed recovery through the ECRC of Gulf's Environmental Auditing Program even though no specific environmental regulation mandated such a program. (Gulf Order p. 19) It also allowed recovery for general air quality costs and emission monitoring costs associated with changes in the scope of compliance both with existing environmental regulations and with new environmental regulations. (Gulf Order p. 17) As OPC points out, it denied recovery of Gulf's Clean Coal Technology program because it was a discretionary research and development project not needed for compliance with any environmental regulations. (Gulf Order p. 18) The Gulf Order demonstrates that from the beginning of its administration of [section 366.8255](#), the Commission has applied the statute and its criteria on a case-by-case basis, not formalistically, but with the flexibility to respond reasonably to complex and variable circumstances.² This approach is consistent with the broad language of [section 366.8255, Florida Statutes](#), which provides that the Commission shall allow recovery of prudently incurred environmental compliance costs. (emphasis supplied)

² See also, for example, Order No. PSC-99-1954-PAA-EI, issued October 5, 1999 in Docket No. 990667-EI, In re: Petition by Gulf Power Company for approval of Plant Smith Sodium Injection System as new program for cost recovery through environmental cost recovery clause. (Commission approved the project both to comply with new clean air act amendment Phase II requirements and to maintain compliance with existing air permit requirements); Order No. PSC-98-1764-FOF-EI, issued December 31, 1998, in Docket No. 980007-EI, In re: Environmental Cost Recovery Clause (Commission approved Gulf's additional groundwater monitoring equipment to continue with existing legal requirement because greater treatment capacity was needed. The Commission also approved two additional coal crushers for TECO's Gannon station, even though it could not determine whether the crushers were necessary to comply with the CAAA; "however, it appears that additional crushers at the Gannon station will contribute in the overall efforts to achieve lower NO_x emissions if TECO continues to use PRB coal at Gannon.")

As shown in Exhibit A to this Order and incorporated by reference herein as part of the parties stipulated position on the uncontested projects of the FGD Reliability Program, there are 13 component projects under the program, with estimated costs totaling over \$21.6 million. Over \$2.6 million of the costs are allocated for recovery through base rates. As described above, only four projects are contested. The four projects and their estimated costs are summarized below.

Project Name (Abbreviation)	Estimated Costs
Big Bend Units 1-4 Electric Isolation (Electric Isolation)	\$6,600,000
Big Bend Units 3-4 Split Inlet Duct (Split Inlet Duct)	\$116,000
Big Bend Units 3-4 Split Outlet Duct (Split Outlet Duct)	\$4,829,000
Gypsum Fines Filter	\$2,866,000
Total at Issue	\$14,411,000

*7 There is no dispute that pursuant to the Gulf Order and later Commission orders implementing [section 366.8255, Florida Statutes](#), only activities that are required to comply with a governmentally imposed environmental regulation

are eligible for recovery through the ECRC. The policy advocated by OPC with respect to what is required to comply with a governmentally imposed environmental regulation, however, appears to be a more restrictive interpretation of our authority to implement the statute than the language of the statute contemplates. The key elements of OPC's position are that there must be a "new" environmental requirement, that the projects must be "necessary to comply with the environmental requirement," and that recovery of the costs of the projects will not lead to double recovery of costs already provided for in base rates. These positions track the criteria established in the Gulf Order, but add additional limitations to the application of those criteria.

New Environmental Requirement

Both [section 366.8255, Florida Statutes](#), and the Gulf Order indicate that an environmental requirement is a "new" environmental requirement if the costs associated with its implementation occurred after 1993 and it was enacted, effective, or whose effect was triggered after the company's last test year upon which rates are based. No other time limitations are ascertainable from the statute or the Commission's decisions. The evidence is uncontested that TECO's Consent Decree with the EPA was executed in 2000 and no costs to implement the settlement were incurred before April 13, 1993. It is also clear that TECO's last rate case was filed before the litigation which led to the Consent Decree.³ This is also evident by the fact that the Commission has already approved other programs triggered by the Consent Decree.⁴ Clearly, the Consent Decree has been established as an eligible environmental compliance requirement for TECO pursuant to the statute and Commission policy.

³ See Order No. PSC-93-0758-FOF-EI Approving 1994 Rates for Tampa Electric Company, issued May 19, 1993, in Docket No. 920324-EI, In re: Application for a rate increase by Tampa Electric Company.

⁴ See Order No. PSC-05-0502-PAA-EI, issued May 9, 2005, in Docket No. 041376-EI, In re: Petition for approval of new environmental program for cost recovery through Environmental Cost Recovery Clause by Tampa Electric Company. (Commission approved the Big Bend Units 1-3 selective catalytic reduction (SCR) Program.)

Further, while OPC contests four of the 13 proposed projects as not eligible for recovery through the ECRC because Paragraph 40 of the Consent Decree is not a "new" requirement, it has stipulated to the recovery of the costs of the remaining projects, most through the ECRC. Inherent in that stipulation is the assumption that the Consent Decree is a new legal requirement. OPC cannot logically argue that that requirement is not "new" as to some of the reliability projects, but is "new" for others. OPC's argument fails to take into consideration the language of the Gulf Order criteria, which states that projects are eligible for ECRC recovery if they are legally required to comply with a governmentally imposed environmental regulation enacted, became effective, or whose effect was triggered after the company's last test year upon which rates are based. That is true for the entire Consent Decree, and especially for Paragraph 40. (emphasis supplied)

*8 OPC's Witness Hewson argues that the requirement set forth in Paragraph 40 has been known to TECO since it signed the Consent Decree in 2000, and therefore it cannot be considered a "new" requirement. As stated above, however, and as OPC Witness Merchant's testimony confirms, a new requirement is relative to the ECRC implementation date, April 13, 1993, and a company's last base rate test year after which the requirement was enacted, became effective, or whose effect was triggered. It is not determined by whether or for how long the company knew about the requirement.

Witness Hewson also argues that the projects TECO has proposed to comply with Paragraph 40 of the Consent Decree are not new or different from TECO's existing scrubber optimization plans. He states that the existing plans can be modified at any time and the deadlines set forth in Paragraph 40 are essentially the end of a transition period. The record indicates, however, that TECO has made substantial efforts to differentiate the activities it has undertaken to implement the two programs. The existing scrubber optimization plans were near-term operation and maintenance activities required by Paragraph 31 of the Consent Decree, before the allowance to bypass the scrubbers is phased out

by the deadlines set forth in Paragraph 40. After the bypass allowance is eliminated, any generating units served by the scrubber must be shut down when that scrubber goes down. Therefore, to maintain the same unit availability, scrubber reliability must be improved after the bypass allowance is eliminated. These capital projects are intended to achieve a long term solution not contemplated by the near-term operation and maintenance activities required by Paragraph 31.

In addition, the notion that TECO should have considered the requirements in Paragraph 40 and Paragraph 31 of the Consent Decree as one requirement is inconsistent with Commission regulatory policy. Under economic regulation, TECO is required to take prudent and reasonable actions to minimize the environmental compliance cost impact to its customers before funding a project, whether the project is funded through base rates or the ECRC. The cost-benefit analysis of the FGD Reliability Program that TECO conducted demonstrates the program's desirability as a compliance option. It cannot be construed as an indication that the program is discretionary and driven by its own desirability. Without economic justification, choosing a more stringent and costly environmental compliance option by giving up the allowance to bypass the scrubbers earlier than the deadlines set forth in Paragraph 40 may be deemed imprudent. TECO has provided the cost-benefit analysis to justify the acceleration of some of these projects to coincide with the installation of the SCRs.

Necessity of the Projects

Paragraph 40 of the Consent Decree does not include explicit language requiring the 13 reliability projects TECO has proposed or any other specific engineering project to comply with the requirement that the Big Bend Units not operate unscrubbed after 2010 and 2013. We agree with TECO that the principle stated in the Turtle Order applies here. Where the environmental requirement does not detail the specific means to comply with the requirement, the utility is “impliedly required” to implement compliance by the most reasonable and cost effective means. (Turtle Order, p. 5) Under this standard we find that the FGD Reliability Program and the four projects in dispute are necessary to comply with the Consent Decree.

***9** We do not believe that we can find these projects to be discretionary based on the information TECO did or did not include in its Quarterly Reports to the EPA. The evidence shows that some of the information TECO submitted related to implementation of another section of the Consent Decree, Paragraph 31, and some of the information was submitted to take full advantage of the safe harbor provision of the Consent Decree to protect itself from further litigation with the EPA. We agree with witness Crouch that the wording of the reports does not change the nature of the projects, which would not have been undertaken but for the requirements of Paragraph 40.

With respect to the gypsum fines filter project, the fact that a project may deliver benefits in addition to its intended objective should not be a reason to forgo a project. While the value of the gypsum could increase as a result of the gypsum fines filter project, it does not follow that the project was driven by the desire to produce more saleable gypsum, as Witness Stamberg asserts. Commission policy dictates that any increased sales should be credited back to the ratepayer. As Witness Smolenski testified, TECO's customers benefit from revenues derived from the gypsum sales. The record indicates that the gypsum fines filter project is a component of Group C projects that are needed to mitigate the decreased reliability due to operational issues related to the dewatering system.⁵ These operational issues appear to be the basis of OPC's witness Stamberg's conclusion that the vacuum pump upgrades, another component of the Group C projects, would likely improve future scrubber operation and reliability. Witness Stamberg also recognizes the integrated nature of the two projects by noting that both projects appear to make an improved gypsum suitable for sale into the gypsum market. The fact that he thinks the vacuum pump project is needed regardless of whether it may deliver benefits other than its intended objective only reinforces the conclusion that the same should apply to the gypsum fines filter project.

5 Group C projects include both the gypsum fines filter project and the gypsum filter vacuum pump upgrades. (EXH 4, Document 1 at p.23-24)

OPC's position that the electric isolation project and the split inlet duct and outlet duct projects are discretionary is not supported by the record. The current configuration of the Big Bend Station, including the sharing of the common electric power supply, the duct system, and the absorber towers, was designed based on the assumption that TECO would be able to operate generating units 1, 2, and 3 without scrubbing the flue gas. After this bypass allowance expires due to the additional restriction imposed by Paragraph 40 of the Consent Decree, scrubber reliability must be improved. Changing the current configuration is an essential component of the scrubber reliability program, so that the operational issues of a single generating unit remain isolated and will not affect other units. The electric isolation project provides this isolation for the electric power supply system, while the duct reconfiguration provides isolation for the corresponding duct system, which will also isolate the absorber towers for each of the two units.

***10** OPC's Witness Stamberg acknowledges existing operational issues related to the electric system and the absorber towers; he also acknowledges the need to address those issues in order to improve reliability. We find that the operational issues will be further compounded by the restriction imposed by Paragraph 40 of the Consent Decree and the selective catalytic reduction (SCR) units yet to be installed. The record shows that these projects are needed to mitigate those operational issues. The record also supports the conclusion that there is a direct nexus between the projects and the environmental requirements of Paragraph 40 of TECO's Consent Decree.

Potential Double Recovery of Base Rate Items

With respect to Witness Merchant's concern about double recovery, we note that approval for ECRC eligibility does not mean guaranteed recovery of all project costs. The Commission has a rigorous annual cost recovery hearing process to ensure that only the actual, incremental costs above base rates that are reasonably and prudently incurred are recovered through the ECRC. An environmental compliance program has to be first determined to be eligible for the ECRC, as this docket was established to do. The annual rate setting process gives full opportunity for all parties to conduct discovery to ensure that only actual, prudently incurred costs that are incremental to base rates are allowed recovery. Cost recovery is not final until the final true-up has been audited, brought before the Commission, and has had the full hearing process.

In addition, TECO has removed capital items associated with two projects from the ECRC based on its understanding of Commission policy. New equipment such as booster fans, with an estimated cost of over \$2.6 million, will not be recovered through the ECRC because they will replace older equipment already in base rates. The question for the four projects at issue here is whether there are base rate items that should not be recovered through the ECRC because they will replace equipment already in base rates.

The new Induced Draft (ID) fans 3A and 3B, and the new transformer 3B that will serve the new ID fan load, are considered by OPC to be discretionary. TECO responds that the new transformer 3B is needed as a consequence of the added 12,281 KVA of electrical load due to the new SCR system and the added 12,939 KVA of electrical load due to reconfiguration of the scrubber electrical system. The existing transformer 3A alone will not be able to handle the load. Due to the conversion to balanced draft operation after installing the ID fans, 3,750 KVA of the existing boiler load will be transferred to the ID fans. This 3,750 KVA load, representing 18 percent of transformer 3B's total connected load, will not be dedicated to pollution control. The new transformer 3B will not replace the existing transformer 3A. This is different from the booster fan project where fully depreciated base rate items are replaced with new equipment that is accordingly not included in the ECRC. We find that the new transformer 3B is not a base rate item.

***11** The record shows that the new ID fans 3A and 3B will not replace the existing force draft fans, but part of the boiler process served by the two force draft fans will be transferred to the new ID fans. The 3,750 KVA of the existing boiler load transferred to the ID fans represents close to 20 percent of the total ID fan load of 19,000 KVA. Neither

TECO nor OPC has offered any suggestion or reasoning regarding partial removal of base rate items based on allocated base rate function. In addition, the record indicates those ID fans are related to a separate SCR program which was approved in 2005.

We believe that even though transformer 3B will not be fully dedicated to pollution control, it still provides a critical function of electric isolation for the Scrubber Reliability Program and it should not be considered a base rate item. The ID fans are related to a separate ECRC program. Because those ID fans will be added in 2008, their costs will be part of TECO's projection filings and subject to review in the 2007 hearing process. OPC will have the opportunity to review additional evidence, and TECO should consider removing a portion of these costs from ECRC to reduce immediate ratepayer impact.

CONCLUSION

The four projects at issue are part of an integrated program intended to improve scrubber reliability as a compliance option for the requirement imposed by Paragraph 40 of TECO'S Consent Decree. The record is clear that absent the reliability program, an alternative compliance option that does not include these four essential component projects will likely result in significant impact to customers in additional replacement power costs, as well as the potential impact to the power grid reliability that was not factored into TECO's cost-benefit analysis. We believe that approval of these projects as eligible for cost recovery through the ECRC is consistent with the statute and in the public interest. We approve them, as we do the stipulated position of the parties regarding the remaining projects in the FGD Reliability Program, including:

- (a) Big Bend Units 1-4 Mist Eliminator Upgrades
- (b) Big Bend Units 1-4 On-line Mist Eliminator Wash System
- (c) Big Bend Units 1-4 On-line Nozzle Wash System
- (d) Gypsum Filter Vacuum Pump Upgrades
- (e) Big Bend Units 1-2 Gypsum Blow Down Line
- (f) Controls Additions
- (g) Big Bend Units 3-4 FGD Booster Fan Capacity Expansion
- (h) Big Bend Units 1-2 Recycle Pump Discharge Isolation Bladders
- (i) Big Bend Units 1-2 Inlet Duct C-276 Wallpaper

Stipulated Position:

The costs of the projects listed in (a) through (i) above (which exclude electric isolation, split inlet duct and outlet duct, and gypsum fines filter projects) should be recovered through the Big Bend FGD System Reliability (New) ECRC Program, the Big Bend Units 1 and 2 FGD System Reliability (Existing) ECRC Program and through base rates, allocated among the three methods of recovery in the manner shown in the chart entitled "Big Bend Flue Gas Desulphurization System Reliability Program Recovery of Expenditures-Revised" filed on March 16, 2006 by Tampa Electric, a copy of which is attached hereto and by reference made a part hereof. The allowance or disallowance of costs for recovery through base

rates is appropriately decided in a base rate proceeding. (OPC specifically does not stipulate to the reasonableness or prudence of costs or expenses that are identified as recoverable through base rates or that are subsequently recovered through base rates since issues related to base rate recovery are outside the scope of this petition.)

*12 Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that the Petition for approval of new environmental program for cost recovery through Environmental Cost Recovery Clause by Tampa Electric Company is approved as set out in the body of this Order. It is further

ORDERED that this docket shall be closed after the time for filing an appeal has run.

By ORDER of the Florida Public Service Commission this 11th day of June, 2007.

ANN COLE Commission Clerk

(SEAL)

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by [Section 120.569\(1\), Florida Statutes](#), to notify parties of any administrative hearing or judicial review of Commission orders that is available under [Sections 120.57 or 120.68, Florida Statutes](#), as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by [Rule 25-22.060, Florida Administrative Code](#); or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Office of Commission Clerk, and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to [Rule 9.110, Florida Rules of Appellate Procedure](#). The notice of appeal must be in the form specified in [Rule 9.900\(a\), Florida Rules of Appellate Procedure](#).

End of Document

© 2018 Thomson Reuters. No claim to original U.S. Government Works.



KeyCite Yellow Flag - Negative Treatment

Order Amended by [In Re: Environmental Cost Recovery Clause.](#), Fla.P.S.C., December 21, 2007

2007 WL 4148673 (Fla.P.S.C.)

Slip Copy

In Re: Environmental Cost Recovery Clause.

070007-EI

PSC-07-0922-FOF-EI

Florida Public Service Commission

November 16, 2007

APPEARANCES: R. WADE LITCHFIELD, ESQUIRE, Vice President and Associate General Counsel, and JOHN T. BUTLER, ESQUIRE, Senior Attorney, 700 Universe Boulevard, Juno Beach, FL 33408-0420 On behalf of Florida Power & Light Company (FPL). JOHN T. BURNETT, ESQUIRE, Associate General Counsel, and R. ALEXANDER GLENN, ESQUIRE, Deputy General Counsel, 299 1st Avenue North, St. Petersburg, FL 33701 and GARY PERKO, ESQUIRE, and VIRGINIA C. DAILEY, ESQUIRE, Hopping Law Firm, Post Office Box 6526, Tallahassee, FL 32314 On behalf of Progress Energy Service Company, LLC (PEF). JEFFREY A. STONE, ESQUIRE, RUSSELL A. BADDERS, ESQUIRE AND STEVEN GRIFFIN, Beggs & Lane Law Firm, Post Office Box 12950, Pensacola, FL 32591-2950 On behalf of Gulf Power Company (Gulf). LEE L. WILLIS, ESQUIRE and JAMES D. BEASLEY, ESQUIRE, Ausley Law Firm, Post Office Box 391, Tallahassee, FL 32302 On behalf of Tampa Electric Company (TECO). CHARLES J. BECK, ESQUIRE, JOSEPH E. MCGLOTHLIN, ESQUIRE, AND PATRICIA CHRISTENSEN, ESQ., c/o The Florida Legislature, 111 West Madison Street, Room 812, Tallahassee, FL 32399-1400 On behalf of Office of Public Counsel (OPC). JOHN M. MCWHIRTER, JR., ESQUIRE, c/o McWhirter Law Firm, 400 North Tampa Street, Suite 2450, Tampa, FL 33602 On behalf of Florida Industrial Power Users Groups (FIPUG). MARTHA C. BROWN, ESQUIRE, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850 On behalf of the Florida Public Service Commission (Staff).

Before Lisa Polak Edgar, Chairman, Matthew M. Carter II, Katrina J. McMurrian, Nancy Argenziano and Nathan A. Skop, Commissioners.

FINAL ORDER APPROVING PROJECTED EXPENDITURES AND TRUE-UP AMOUNTS FOR ENVIRONMENTAL COST RECOVERY FACTORS

BY THE COMMISSION:

I. CASE BACKGROUND

*1 As part of the Commission's ongoing environmental cost recovery proceedings, a hearing was held on November 6, 2007, in this docket. At the hearing, the parties addressed the issues set out in Order No. PSC-07-0886-PHO-EI, the Prehearing Order. Part II of this Order addresses the stipulated generic issues in the case and Part III addresses the stipulated company-specific issues in the case.

II. STIPULATED GENERIC ENVIRONMENTAL COST RECOVERY ISSUES

A. We approve as reasonable the following final environmental cost recovery true-up amounts for the period ending December 31, 2006:

FPL: \$1,563,849 over-recovery including interest.

PEF:	\$2,446,714 over-recovery including interest.
GULF:	\$2,258,385 over-recovery including interest.
TECO:	\$11,895,683 under-recovery including interest.

OPC and FIPUG took no position.

B. We approve as reasonable the following estimated environmental cost recovery true-up amounts for the period January 2007 through December 2007:

FPL:	\$585,826 under-recovery including interest.
PEF:	\$3,333,530 under-recovery including interest.
GULF:	\$2,117,926 under-recovery including interest.
TECO:	\$9,624,173 over-recovery including interest.

OPC and FIPUG took no position.

C. We approve as reasonable the following projected environmental cost recovery amounts for the period January 2008 through December 2008:

FPL:	\$44,712,161.
PEF:	\$43,204,989.
GULF:	\$49,861,194.
TECO:	\$18,911,243.

OPC and FIPUG took no position.

D. We approve as reasonable the following environmental cost recovery amounts, including true-up amounts for the period January 2008 through December 2008:

FPL:	\$43,765,627, adjusted for prior period true-ups and revenue taxes.
PEF:	\$44,123,551, adjusted for taxes.
GULF:	\$49,720,735 excluding revenue taxes.
TECO:	\$21,198,005 after the adjustment for taxes.

OPC and FIPUG took no position.

E. We approve as reasonable the determination that the depreciation rates to be used to develop the depreciation expense included in the total environmental cost recovery amounts for the period January 2008 through December 2008 shall be the depreciation rates that are in effect during the period the allowed capital investment is in service.

F. We approve as reasonable the following jurisdictional separation factors for the projected period January 2008 through December 2008:

FPL:	Energy Jurisdictional Factor	98.58121%
	CP Demand Jurisdictional Factor	98.76048%
	GCP Demand Jurisdictional Factor	100.00000%

PEF: The jurisdictional energy separation factor is calculated for each month based on retail kWh sales as a percentage of projected total system kWh sales.

Transmission Average 12 CP demand jurisdictional factor -	70.597%
Distribution Primary demand jurisdictional factor -	99.597%
Jurisdictional Separation Study factors were used for production demand	
jurisdictional factor as Production Base —	93.753%,
Production Intermediate —	79.046%, and
Production Peaking —	88.979%.

***2 GULF:** The demand jurisdictional separation factor is 96.42160%. Energy jurisdictional separation factors are calculated each month based on retail KWH sales as a percentage of projected total territorial KWH sales.

TECO: The demand jurisdictional separation factor is 96.66743%. The energy jurisdictional separation factors are calculated for each month based on projected retail kWh sales as a percentage of projected total system kWh sales. These are shown on the schedules sponsored by witness Bryant.

OPC and FIPUG took no position.

G. We approve as reasonable the following environmental cost recovery factors for the period January 2008 through December 2008:

FPL: The appropriate factors are:

Rate Class	Environmental Recovery Factor (\$/kWh)
RS-1/RST1	0.00040
GS-1/GST1/WIES1	0.00040
GSD1/GSDT1/HLFT1(21-499 kW)	0.00038
OS2	0.00042
GSLD1/GSLDT1/CS1/CST1/HLFT2 (500-1,999 kW)	0.00038

GSLD2/GSLDT2/CS2/CST2/HLFT3 (2,000 +)	0.00035
GSLD3/GSLDT3/CS3/CST3	0.00034
ISST1D	0.00036
ISST1T	0.00031
SST1T	0.00031
SST1D1/SST1D2/SST1D3	0.00036
CILC D/CILC G	0.00035
CILC T	0.00034
MET	0.00039
OL1/SL1/PL1	0.00029
SL2/GSCU-1	0.00032

PEF: The appropriate factors are as follows:

RATE CLASS	ECRC FACTORS
Residential	0.118 cents/kWh
General Service Non-Demand	
@ Secondary Voltage	0.109 cents/kWh
@ Primary Voltage	0.108 cents/kWh
@ Transmission Voltage	0.107 cents/kWh
General Service 100% Load Factor	0.081 cents/kWh
General Service Demand	
@ Secondary Voltage	0.094 cents/kWh
@ Primary Voltage	0.093 cents/kWh
@ Transmission Voltage	0.092 cents/kWh
Curtable	
@ Secondary Voltage	0.090 cents/kWh
@ Primary Voltage	0.089 cents/kWh
@ Transmission Voltage	0.088 cents/kWh
Interruptible	

@ Secondary Voltage	0.079 cents/kWh
@ Primary Voltage	0.078 cents/kWh
@ Transmission Voltage	0.077 cents/kWh
Lighting	0.094 cents/kWh

GULE: See table below

RATE CLASS	ENVIRONMENTAL COST RECOVERY FACTORS ¢/kWh
RS, RSVP	.436
GS	.431
GSD, GSDD, GSTOU	.423
LP, LPT	.411
PX, PXT, RTP, SBS	.401
OS-I/II	.391
OSIII	.413

TECO: The appropriate factors are:

Rate Class	Factor (cents/kWh)
RS, RST	0.104
GS, GST, TS	0.104
GSD, GSDD	0.105
GSLD, GSLDD, SBF	0.104
IS1, IST1, SBI1, SBIT1, IS3, IST3, SBI3	0.102
SL, OL	0.105
Average Factor	0.104

OPC and FIPUG took no position.

H. For billing purposes, the new environmental cost recovery factors shall be effective beginning with the first billing cycle for January 2008, and thereafter through the last billing cycle for December 2008. The first billing cycle may start before January 1, 2008, and the last billing cycle may end after December 31, 2008, so long as each customer is billed for twelve months regardless of when the factors became effective.

III. STIPULATED COMPANY SPECIFIC ISSUES

*3 OPC and FIPUG took no position on the company specific issues addressed below.

Florida Power & Light (FPL)

A. We approve the following stipulation regarding whether FPL should be allowed to recover costs associated with its proposed St. Lucie Cooling Water System Inspection and Maintenance Project:

Yes. FPL must inspect and, as necessary, maintain the cooling water system at the St. Lucie Plant so that it remains in compliance with the federal Endangered Species Act, [16 U.S.C. Section 1531](#). FPL agrees that its recovery of project costs through the ECRC is subject to Commission audit to ensure such costs are not otherwise recovered in base rates.

B. We approve the following stipulation regarding how the newly proposed environmental costs for the St. Lucie Cooling Water System Inspection and Maintenance Project should be allocated to the rate classes:

Capital costs for the St. Lucie Cooling Water System Inspection and Maintenance Project should be allocated to the rate classes on an average 12 CP demand and 1/13th energy basis. Operating and maintenance costs should be allocated to the rate classes on an average 12 CP demand basis.

C. We approve the following stipulation regarding whether FPL should be allowed to recover costs associated with its proposed Martin Plant Drinking Water System Compliance Project:

Yes. The Consent Order entered into by FPL and the Florida Department of Environmental Protection (FDEP) on September 22, 2006 requires FPL to implement a corrective action plan at the Martin Plant, which involves the implementation of a pilot test plan to determine the most cost-effective method to achieve compliance of levels of four certain trihalomethanes (THMs) and haloacetic acids (HAA5s) in the drinking water system. The projected and actual costs will be subject to the normal audit, true-up and review process that takes place annually in the ECRC proceedings. FPL agrees that its recovery of project costs through the ECRC is subject to Commission audit to ensure such costs are not otherwise recovered in base rates.

D. We approve the following stipulation regarding how the newly proposed environmental costs for the Martin Plant Drinking Water System Compliance Project should be allocated to the rate classes?

Capital costs for the Martin Plant Drinking Water System Compliance Project should be allocated to the rate classes on an average 12 CP demand and 1/13th energy basis. Operating and maintenance costs should be allocated to the rate classes on an average 12 CP demand basis.

E. We approve the following stipulation regarding whether FPL should be allowed to recover costs associated with its proposed Low Level Radioactive Waste Storage Project:

Yes. The Low Level Radioactive Waste Storage Project is required due to the Nuclear Regulatory Commission's (NRC) requirements and restrictions on how low level radioactive (LLW) waste may be disposed of, combined with FPL's loss of access to the LLW disposal facility in Barnwell South Carolina as a result of new provisions of South Carolina law that take effect on June 30, 2008. The projected and actual costs will be subject to the normal audit, true-up and review process that takes place annually in the ECRC proceedings. FPL agrees that its recovery of project costs through the ECRC is subject to Commission audit to ensure such costs are not otherwise recovered in base rates.

***4** F. We approve the following stipulation regarding how the newly proposed environmental costs for the Low Level Radioactive Waste Storage Project should be allocated to the rate classes:

Capital costs for the Low Level Radioactive Waste Storage Project should be allocated to the rate classes on an average 12 CP demand and 1/13th energy basis. Operating and maintenance costs should be allocated to the rate classes on a 71% average 12 CP demand and 29% energy basis.

G. We approve the following stipulation regarding whether the projected costs for FPL's Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR) compliance projects that are reflected in FPL's March 30, 2007, supplemental filing are reasonable and prudent:

FPL's CAIR, CAMR and Clean Air Visibility Rules (CAVR) compliance plans as presented in its March 30, 2007, supplemental filing have been updated and modified in terms of proposed compliance actions and projected costs both in the Company's testimony of August 3, 2007 and again in the deposition of Company Witnesses LaBauve and Dubin on October 25, 2007. FPL's compliance plans, including the plan changes consisting of the 800 MW Unit Cycling Project and the "Similar Units" Continuing Emissions Monitoring Systems (CEMS) option implementation identified in the Company's testimony of August 3, 2007 and the scope changes associated with the installation of Wet Flue Gas Desulfurization (FGD) Unit and SCR with Ammonia Injection System on Scherer Unit 4 as identified in the deposition of witnesses LaBauve and Dubin on October 25, 2007, appear reasonable at this time. FPL shall file, as part of its annual ECRC final true-up testimony, a review of the efficacy of its CAIR and CAMR and CAVR plans, and the cost-effectiveness of its retrofit options for each generating unit in relation to expected changes in environmental regulations and ongoing state and federal CAIR legal challenges now being pursued by FPL. The reasonableness and prudence of individual expenditures, and the prudence of future decisions on the compliance plans made in light of subsequent developments, shall continue to be subject to the Commission's review in future proceedings on these matters.

Progress Energy Florida

A. We approve the following stipulation regarding whether we should approve PEF's updated Integrated Clean Air Compliance Plan as a reasonable and prudent means to comply with the Clean Air Interstate Rule ("CAIR"), Clean Air Mercury Rule ("CAMR") and Clean Air Visibility Rule ("CAVR") and related regulatory requirements:

Yes. PEF's updated Integrated Clean Air Compliance Plan represents the most cost-effective alternative for achieving and maintaining compliance with CAIR, CAMR, and CAVR, and related regulatory requirements, and it is reasonable and prudent for PEF to recover prudently incurred costs to implement the plan. PEF shall file as part of its true-up testimony in the Environmental Cost Recovery Clause a yearly review of the efficacy of its Plan D and the cost-effectiveness of PEF's retrofit options for each generating unit in relation to expected changes in environmental regulations.

***5** Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that the stipulations and findings set forth in the body of this order are hereby approved. It is further

ORDERED that each utility that was a party to this docket shall abide by the stipulations and findings herein which are applicable to it. It is further

ORDERED that the utilities named herein are authorized to collect the environmental cost recovery amounts and use the factors approved herein beginning with the specified environmental cost recovery cycle and thereafter for the period of January 2008 through December 2008. Billing cycles may start before January 1, 2008, and the last cycle may be

read after December 31, 2008, so that each customer is billed for 12 months regardless of when the adjustment factor became effective.

By ORDER of the Florida Public Service Commission this 16th day of November, 2007.

ANN COLE Commission Clerk

(SEAL)

NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by [Section 120.569\(1\), Florida Statutes](#), to notify parties of any administrative hearing or judicial review of Commission orders that is available under [Sections 120.57 or 120.68, Florida Statutes](#), as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Office of Commission Clerk, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, within fifteen (15) days of the issuance of this order in the form prescribed by [Rule 25-22.060, Florida Administrative Code](#); or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water and/or wastewater utility by filing a notice of appeal with the Office of Commission Clerk, and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to [Rule 9.110, Florida Rules of Appellate Procedure](#). The notice of appeal must be in the form specified in [Rule 9.900\(a\), Florida Rules of Appellate Procedure](#).

End of Document

© 2018 Thomson Reuters. No claim to original U.S. Government Works.

Dated: July 23, 2018.

Respectfully submitted,

/s/ Stuart H. Singer

Stuart H. Singer (FBN 377325)

ssinger@bsfllp.com

ftleserve@bsfllp.com

BOIES SCHILLER FLEXNER LLP

401 East Las Olas Boulevard, Suite 1200

Fort Lauderdale, FL 33301

Tel.: (954) 377-4201

Counsel for Appellee

Florida Power & Light Company

John T. Butler (FBN 283479)

john.butler@fpl.com

María José Moncada (FBN 773301)

maria.moncada@fpl.com

FLORIDA POWER & LIGHT COMPANY

700 Universe Boulevard

Juno Beach, FL 33408

Tel.: (561) 304-5795

Fax: (561) 691-7135

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true copy and correct copy of the foregoing was served electronically on July 23, 2018:

Rosanne Gervasi
Samantha Cibula
Charles Murphy
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-1400
rgervasi@psc.state.fl.us
scibula@psc.state.fl.us@psc.state.fl.us
cmurphy@psc.state.fl.us
Office of the General Counsel
Florida Public Service Commission

J. R. Kelly, Public Counsel
Charles J. Rehwinkel
Stephanie Morse
Office of Public Counsel
c/o The Florida Legislature
111 West Madison Street, Room 812
Tallahassee, FL 32399-1400
kelly.jr@leg.state.fl.us
rehwinkel.Charles@leg.state.fl.us
morse.stephanie@leg.state.fl.us
Attorneys for the Citizens
of the State of Florida

/s/ Stuart H. Singer

Attorney