FILED MAR 27, 2014
DOCUMENT NO. 01352-14
FPSC - COMMISSION CLERK

State of Florida

Public Service Commission

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TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: March 27, 2014

TO: Office of Commission Clerk (Stauffer)

FROM: Division of Engineering (Graves, Mtenga) REG TVB
Division of Economics (Wu) JWD
Office of the General Counsel (Murphy) CMR AFT

RE: Docket No. 130301-EI – Petition to modify scope of existing environmental program by Duke Energy Florida, Inc.

AGENDA: 04/10/14 – Proposed Agency Action – Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Brisé

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

Case Background

On December 31, 2013, Duke Energy Florida, Inc. (DEF or Company) petitioned the Florida Public Service Commission (Commission) to modify the scope of its previously approved Integrated Clean Air Compliance Program to encompass additional compliance activities at the Company's Crystal River Units 1 and 2 (Petition). With such approval, prudently incurred costs associated with such activities may be recovered through the Environmental Cost Recovery Clause (ECRC).

On March 25, 2014, Sierra Club and Earthjustice (collectively Sierra Club) filed comments, recommending denial of the Petition, as interested persons in this docket. Sierra Club's comments contained an 11 page letter, summarizing its recommendation, and over 600 pages of Appendices. On March 26, 2014, Sierra Club revised its comments.

Pursuant to Section 366.8255(2), Florida Statutes (F.S.), electric utilities may petition the Commission to recover projected environmental compliance costs required by environmental laws or regulations. The Commission has jurisdiction over this matter pursuant to Section 366.8255, F.S.

Discussion of Issues

Issue 1: Should the Commission approve Duke Energy Florida's petition to modify the scope of its existing environmental compliance program and recover the associated costs through the Environmental Cost Recovery Clause?

Recommendation: Yes. DEF has sufficiently demonstrated that the proposed activities are needed to comply with environmental regulations. DEF has estimated that the proposed activities and resultant continued operation of Crystal River Units 1 and 2, through mid-2018, will result in a net present value savings of $307 million when compared to retiring the units in 2016. Therefore, DEF's Petition should be approved. (Graves, Mtenga, Wu)

Staff Analysis: By its Petition, DEF requests Commission approval to recover, through the ECRC, reasonably and prudently incurred costs associated with new activities at the Company's Crystal River Units 1 and 2 (CR 1 and 2). The proposed activities consist of: (1) the addition of dry sorbent injection; (2) the addition of activated carbon injection; and (3) changes to the existing electrostatic precipitators. DEF asserts that the proposed activities are needed for compliance with the Environmental Protection Agency's (EPA) Mercury Air Toxics Standards Rule (MATS) and Clean Air Visibility Rule (CAVR).

According to DEF's Petition, the Company has estimated that the total cost of the activities will be approximately $28 million. In addition to the project costs, DEF expects to incur annual O&M costs of approximately $2 million while the new pollution controls remain in operation. All projects are projected to be in-service by February 2016. Attachment A summarizes the estimated ECRC impact associated with these projects.

Criteria for ECRC Eligibility

Pursuant to Section 366.8255(2), F.S., electric utilities may petition the Commission to recover projected environmental compliance costs that are required by environmental laws or regulations. The Commission has interpreted the statute to prescribe two criteria, relevant to this docket, for recovery of environmental compliance costs through the clause. Pursuant to Order No. PSC-94-0044-FOF-EI, these criteria are:

(1) The activities are legally required to comply with a governmentally imposed environmental regulation that was created, became effective, or whose effect was triggered after the company's last test year upon which rates are based.

(2) None of the expenditures are being recovered through some other cost recovery mechanism or through base rates.[1]

With respect to the second criterion, staff has not found any information that suggests that the costs, for which DEF is seeking recovery, are being recovered through base rates or any other cost recovery mechanism. Therefore, staff's review of the proposed activities is focused on

[1] See 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 366.0825, Florida Statutes by Gulf Power Company.

whether or not the proposed activities are necessary for compliance with governmentally imposed environmental regulation. Also staff will evaluate whether the proposed activities are prudent at this time.

Staff's Summary and Analysis of DEF's Proposed Activities

CR 1 and 2 both entered commercial service prior to 1970 and are located at DEF's Crystal River Energy Complex (Crystal River Site). Current air permits allow the units to continue operating on coal through 2020, presuming compliance with all applicable regulations.[2] Currently applicable regulations include MATS and CAVR, which DEF asserts are the governmentally imposed regulations that require the activities proposed in the Petition.

Mercury and Air Toxics Standards Rule (MATS)

On February 16, 2012, the EPA issued the MATS rule. The MATS rule imposes emission limits for: (1) mercury; and (2) acid gases (hydrochloric acid) on coal and oil-fired electric utility generating units, including CR 1 and 2 and Crystal River Units 4 and 5.[3] MATS compliance for existing coal-fired power plants, is required by April 16, 2015, with a provision for a one-year extension under limited circumstances. Based on existing data, CR 1 and 2, as currently operated, would exceed the previously mentioned emission limits set by MATS.

Subsequent to the issuance of the MATS rule, the Florida Reliability Coordinating Council (FRCC) performed a study evaluating the potential impact of shutting-down CR 1 and 2 in 2015 as a means for compliance with MATS. In its study, the FRCC determined that significant reliability issues would result from the retirement/shutdown of the Crystal River units (Including Crystal River Unit 3). The FRCC study concluded that an extension of at least one-year on the MATS compliance deadline is needed for reliability purposes.

The FRCC also determined that the addition of new generation, specifically a 1,179 megawatt combined cycle power plant, in the vicinity of the existing Crystal River plant, combined with other projects and operating solutions, would resolve the reliability issues created by the shutdown of CR 1 and 2 and Crystal River Unit 3. On February 6, 2014, the Florida

[2] In support of efforts to address CAVR requirements for SO2 and NOx (scheduled to take effect in 2018), Florida Department of Environmental Protection issued new air permits for CR 1 and 2. The new permits, issued in September and October 2012, required DEF to install Flue Gas Desulfurization and Selective Catalytic Reduction on CR 1 and 2 by 2018 or cease coal fired operation of the units on or before the end of 2020. On April 30, 2013, DEF notified the Florida Department of Environmental Protection of its decision to shut down CR 1 and 2 by December 31, 2020.

[3] See 40 CFR 63.9981 (applying the regulation to operators of coal-fired EGUs); 40 CFR 63.9982 (describing sources affected by the new regulation including existing coal-fired EGUs); 40 CFR 63.10042 (defining "coal-fired electric utility steam generating unit" to mean an electric utility steam generating unit meeting the definition of "fossil fuel-fired" that burns coal for more than 10.0 percent of the average annual heat input during any three consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year and providing that "fossil fuel-fired" means in part," an electric utility steam generating unit that is capable of combusting more than 25 MW of fossil fuels; and, Table 2 of 40 C.F.R. Part 63, Subpart UUUUU (Emission Limits for Existing EGUs). (Table 2 to 40 C.F.R. Part 63, Subpart UUUUU, Table 2 also contains limits for particulate emissions, however, data provided by DEF indicates that CR 1 and 2 meet these requirements.).

Department of Environmental Protection (DEP) granted DEF's request for a one-year extension citing the results of the FRCC's study. Therefore, MATS compliance for CR 1 and 2 is required by April 16, 2016.

Based on 2013 data, Crystal River Units 4 and 5 operate within the MATS limits; however, CR 1 and 2 would require more than $1 billion of additional emission control systems to meet these limits as stand-alone units.[4] Therefore, DEF evaluated complying with the site-wide averaging provisions of the MATS rule which allows averaging of emissions across co-located units at a plant site like the Crystal River Site. DEF asserts that applying the site-wide averaging provision of MATS coupled with the use of alternative coal and the addition of less expensive pollution controls, such as the controls proposed in the Petition, will allow DEF to reliably comply with the requirements of MATS by the April 2016 compliance date.

DEF identified and compared the merits of pursuing the following alternatives for compliance with MATS by the 2016 compliance date:

> **Alternative 1**: Retire CR 1 and 2 in April 2016 and meet system requirements with purchased power and/or new resources in a manner that the grid would support. This alternative includes several transmission projects that would need to be completed between 2014 and 2017.
>
> **Alternative 2**: Establish a MATS compliance plan for CR 1 and 2 and configure the units to operate in compliance through mid-2018, and establish a resource plan to provide for replacement combined cycle generation in that timeframe. This alternative includes a competitive solicitation for combined cycle energy and capacity starting in 2018, identification of additional resources needed in 2016 and beyond, and a transmission plan that supports the required resources.

DEF assessed the transmission resources required to support the replacement power alternatives under consideration in Alternative 1 and estimates that the transmission projects will cost $150 million. Additionally, while the issues identified by the FRCC's study may be addressed with transmission system upgrades, DEF expressed concern regarding the timing of the required upgrades. Based on the timing and magnitude of the projects needed to support Alternative 1, staff believes such concerns are reasonable.

In the 2013 ECRC proceeding, the Commission approved coal trials for the Company to evaluate alternate fuel options that may allow DEF to continue operating CR 1 and 2 beyond the MATS compliance date. Based on the results of DEF's coal trials, the Company has determined that use of coal with lower levels of mercury and chlorides, and the installation of dry sorbent injection and activated carbon injection will allow DEF to continue operating CR 1 and 2 and comply with MATS.

The dry sorbent injection systems utilizing hydrated lime are needed to reduce acid gas emissions. DEF estimates, based on 2013 data, that the dry sorbent injection systems will reduce

[4] See DEF Response to Staff's First Data Request, Item No. 17 for cost estimate.

hydrochloric acid emissions at the Crystal River Site thus allowing it to operate in compliance with MATS. Based on staff's review, DEF's assertion appears to be accurate.[5]

DEF asserts, based on 2013 data, that the activated carbon injection systems will reduce mercury emissions at the Crystal River Site thus providing additional reliability support for the system in the event of an outage at Crystal River Units 4 and 5.[6] Currently, the Crystal River Site operates at the MATS limit for mercury emissions. As discussed, CR 1 and 2 are not MATS compliant on a stand alone basis. Therefore, under the site-wide averaging provision of MATS, compliance is largely dependent on the operation of Crystal River Units 4 and 5. Based on staff's review, the activated carbon injection systems appear to provide a margin necessary for reliable operation of CR 1 and 2.

After DEF established a MATS compliance plan for CR 1 and 2 to operate in compliance through mid-2018, the Company performed an economic evaluation comparing the previously discussed alternatives. Based on its economic evaluation, DEF estimates that Alternative 2, including the $28 million associated with the activities proposed in the Petition, will result in a net present value savings of approximately $307 million, with cumulative savings beginning in 2017, when compared to retiring the units in 2016. In this context, significant savings are associated with avoided transmission projects and avoided purchased power agreements that would be needed in the 2016 through 2018 timeframe for reliability purposes.

Based on the information provided by DEF, staff believes that the proposed dry sorbent injection and activated carbon injection systems are necessary for DEF to continue reliable operation of CR 1 and 2 in compliance with MATS. Furthermore, staff believes that DEF's economic evaluation demonstrates that the addition of the proposed systems is the most cost-effective means for compliance with the requirements of MATS.

Clean Air Visibility Rule (CAVR)

In June 2005, the EPA finalized the CAVR which requires state agencies to improve visibility in national park and wilderness areas. Current air permit requirements, issued by the DEP, limit particulate emissions and opacity for CR 1 and 2.[7]

CR 1 and 2 operate with electrostatic precipitators to reduce particulate emissions and meet the regulatory requirements for CAVR related emission levels. However, the alternate coal usage and the injections from the new pollution controls (necessary for compliance with MATS) reduce the efficiency of the existing electrostatic precipitators and the estimated emissions would exceed the limits set in DEF's air permit. In order to address the reduced efficiency DEF is proposing changes to the electrostatic precipitators to meet the limits set in DEF's air permit.

DEF estimates that the proposed changes to the electrostatic precipitators will allow the Company to continue operation of CR 1 and 2 in compliance with CAVR. The cost for these changes are included in DEF's estimated $28 million project cost. DEF has scheduled tests in

[5] Compare Table 2 of 40 C.F.R. Part 63, Subpart UUUUU with DEF's response to Staff's Second Data Request, Item No. 11.
[6] See DEF Response to Staff's Second Data Request, Item No. 4.
[7] DEP air permit No. 0170004-017-AC.

2014 and 2015 to assess the performance of the electrostatic precipitators. In addition, once the installation and commissioning for all of the compliance projects has been completed, additional testing will be scheduled to confirm expected levels of performance and to demonstrate compliance.

Based on the information provided by DEF, staff believes that the proposed changes to the electrostatic precipitators are necessary for DEF to continue reliable operation of CR 1 and 2 under the environmental requirements including CAVR.

Comments Filed by Sierra Club and Earthjustice

On March 25, 2014, Sierra Club filed comments as interested persons in this docket. Sierra Club's comments state that DEF should retire CR 1 and 2 in 2016 because additional MATS compliance expenditures are not prudent. Sierra Club identified three key reasons for which it believes the Commission should deny the Petition: (1) DEF has not fully accounted for the costs of continued operation of CR 1 and 2; (2) DEF fails to account for how energy efficiency could help meet load requirements in the absence of CR 1 and 2; and (3) DEF has given "short shrift" to renewable resources.

To summarize Sierra Club's first reason for denial of the Petition, it asserts that compliance with EPA rules expected to take effect in the next six years will cost over $1 billion for CR 1 and 2. However, it appears to staff that several of the EPA rules identified by Sierra Club are speculative at this time. As an example, Sierra Club identifies the Cross-State Air Pollution Rule (CSAPR) as a rule that "could" come into effect and as a result DEF and its customers "would likely face" additional costs of approximately $182 million.

With respect to its second reason for denial, Sierra Club, on page 9 of its comments, acknowledges the demand-side management goal setting process as part of Florida's "comprehensive resource planning process." Yet, on page 7 of its comments, Sierra Club also recommends that DEF "move to incremental annual energy savings of 1 percent to 2 percent relative to sales over the next five or six years." Such a recommendation is more appropriate in DEF's upcoming demand-side management goals docket (Docket No. 130200-EI) scheduled for hearing in July 2014.

Lastly, Sierra Club's third reason for denial contends that DEF should pursue additional renewable resources. However, staff notes that, according to DEF's 2013 Ten-Year Site Plan, the Company continues to keep an open request for soliciting proposals for renewable energy projects. To date, the Company has logged over 300 responses. In the Commission's Review of the 2013 Ten-Year Site Plans, it was estimated that approximately 966 megawatts of renewable generation would be added over the ten year planning horizon. Approximately 55 percent (540 megawatts) is contracted with DEF.

As discussed in staff's analysis, compliance requirements for MATS are known at this time and proceeding with the proposed activities is estimated to result in more than $300 million in savings when compared to retiring CR 1 and 2 in 2016, with net savings as soon as 2017. The short term extended operation of CR 1 and 2 appears to be a rational balance between

environmental compliance and maintaining grid reliability. Therefore, staff recommends that the Commission approve DEF's Petition.

Conclusion

Based on DEF's Petition and the Company's responses to data requests, staff recommends that the proposed activities would not be carried out but for DEF's obligation to comply with a government-imposed environmental regulation. Staff has not found any information that suggests that the costs, for which DEF is seeking recovery, are being recovered through base rates or any other cost recovery mechanism. Additionally, staff recommends that DEF's proposed activities are the most cost-effective way to comply with MATS and CAVR. Thus, staff recommends that the proposed program meets the criteria for ECRC cost recovery and DEF's request should be approved.

Issue 2: Should this docket be closed?

Recommendation: Yes. This docket should be closed upon issuance of a Consummating Order unless a person whose substantial interests are affected by the Commission's decision files a protest within 21 days of the issuance of the proposed agency action. (Murphy)

Staff Analysis: This docket should be closed upon issuance of a Consummating Order unless a person whose substantial interests are affected by the Commission's decision files a protest within 21 days of the issuance of the proposed agency action.

Table 1: Estimated ECRC Retail Factor Impact ($/1,000 kWh)[8,9]

2014	N/A
2015	0.32
2016	0.13
2017	0.11
2018	0.07
2019	0.17
2020	0.15
2021	0.14

[8] See DEF's response to Staff's First Data Request, Item No. 31.
[9] Per DEF's response to Staff's First Data Request, Item No. 33, the Company intends to recover any unrecovered costs associated with the proposed activities at CR 1 and 2 retirements through the ECRC over a three-year amortization period.