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DIVISION OF ECONOMICS  
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Public Service Commission

May 2, 2014

Mr. John T. Burnett  
Deputy General Counsel  
Duke Energy Florida, Inc.  
P.O. Box 14042  
St. Petersburg, FL 33733

RECEIVED-FPSC  
14 MAY -5 AM 9:36  
COMMISSION  
CLERK

**Re: Docket No. 140057-EI - Petition for approval of 2014 nuclear decommissioning study, by Duke Energy Florida, Inc.**

Mr. Burnet:

Florida Public Service Commission staff is in the process of reviewing the 2014 Decommissioning Study filed by Duke Energy Florida in the above referenced docket. As a result some questions and concerns have arisen which are enclosed with this letter.

Please provide your responses by June 2, 2014. If there are any questions, please contact Devlin Higgins at (850) 413-6433.

Sincerely,

A handwritten signature in black ink, appearing to read "Devlin Higgins".

Devlin Higgins  
Public Utility Analyst  
Division of Economics

Attachment

cc: Office of the Commission Clerk ✓  
General Counsel (Young)  
Office of Public Counsel  
Diane Triplett  
James Michael Walls  
Blaise N. Gamba

### Data Requests

For the purposes of this Data Request, staff will refer to Duke Energy Florida's (Formerly d/b/a Progress Energy Florida) 2010 update to its 2008 Decommissioning Study, as Duke's 2010 Decommissioning Study, and Duke Energy Florida's (Duke's) 2014 Decommissioning Study as Duke's 2014 Decommissioning Study.

### General

1. For the purposes of the following request, please refer Duke's 2014 Decommissioning Study, Section 1, Page 2 of 8. It is stated in the third paragraph that "TLG did not prepare a comparison report for the current study versus the 2010 study." Florida Public Service Commission Rule 25-6.04365 (3)(q) requires "[a] summary and explanation of material differences between the current study and the utility's last filed study including, at a minimum, changes in methodology and assumptions. Please provide a comparative analysis of DEF's 2010 Decommissioning Study to its 2014 Study, similar to the analysis contained in section 8 of the 2010 Study.
2. Please describe DEF's plans for use of the Crystal River 3 (CR3) site after decommissioning.
3. The planned SAFSTOR period for CR3 appears to be exactly 60 years, the amount of time allowable under this Nuclear Regulatory Commission (NRC) approved decommissioning program. Is there any penalty levied by the NRC for not completing the plant decommissioning within the 60 year timeframe?
4. What financial firm is the third-party trustee of Duke's CR3 Nuclear Decommissioning Trust Fund (NDT)?
5. Please detail the main cost drivers/activities that comprise the License Termination, Spent Fuel Management, and Site Restoration cost categories.
6. Please explain the specific modifications made in Duke's 2014 study to the site-specific considerations and assumptions used in Duke's 2010 analysis. What new information or experience was obtained from ongoing decommissioning programs provided alternatives or improved processes?
7. Do the costs included in Spent Fuel Management relate entirely to estimated costs for on-site spent fuel storage needed due to the failure of the Department of Energy (DOE) to provide a final repository? If negative, identify the portion of the Spent Fuel Management costs relating solely to DOE's breach of contract. Please identify any other costs in this category that would not be incurred except for DOE's contract breach.

8. For the purposes of the following request, please refer to Duke's 2014 Decommissioning Study Petition, page 5, paragraph 13. Here it is stated that "[t]he SAFSTOR decommissioning method is a decommissioning method that is permitted by the NRC and currently employed by other utilities in the industry at other retired nuclear power plants."
  - a. Please list these "other utilities" and how their SAFSTOR experience informed Duke as to its 2014 Decommissioning Cost Estimate.
9. For the purposes of the following request, please refer to Duke's 2014 Decommissioning Study Petition, page 7, paragraph 16. Here it is stated that "the SAFSTOR decommissioning method is the most cost effective, safe, and therefore optimal decommissioning method for the Company and its customers." Please elaborate on why the Company believes the SAFSTOR option is the most "safe" method for the Company and its customers.
10. For the purposes of the following request, please refer to Duke's 2014 Decommissioning Study Summary, Section 1, Page 1 of 8. Please describe what an "Alternate Spent Fuel Cooling System" is, and what location it is contemplated for use (i.e. spent fuel pool, dry storage etc.).
11. For the purposes of the following request, please refer to Duke's 2014 Decommissioning Study Summary, Section 1, Page 5 of 8. Item #4 reads "expenditures of funds accumulated in the Nuclear Decommissioning Trust in the years 2014 – 2074. Please describe in detail what activities these expenditures are intended to address for the years 2014 through 2018.
12. Does DEF's 2014 Decommissioning Cost Study include any credit values for scrap metals? If so, please detail what types and quantities of metals, along with their associated scrap values.
13. Staff understands that the nature of this topic is highly sensitive. To the best of the Company's ability at a high-level, can DEF please describe the security measures that will be in place during CR3's dormancy and decommissioning periods, including spent fuel/Independent Spent Fuel Storage Installation (ISFSI) security.
14. For its 2010 Decommissioning Study, the Company utilized separate inflation indices for Labor, Material, Burial, and Transportation. However, for the current Study, a composite rate was utilized for valuing the cost estimate to a future date.
  - a. Please state the rationale for moving from distinct activity escalators to a composite inflation rate (2.8%).
  - b. To DEF's knowledge, has this approach for estimating the value of future Decommissioning costs been previously accepted by any State Commission?
15. Please refer to Staff's First Data Request in Docket No. 100461-EI, No. 28. For this data Request, staff asked the Company (then PEF) "Has PEF initiated legal action against the

DOE claiming damages for the DOE's failure to meet its obligations in the standard disposal contract? Why or why not?"

The Company's response is as follows:

Yes, both Carolina Power & Light Company and Florida Power Corporation (hereinafter collectively referred to as "Progress Energy") have initiated legal action for breach of contract against the DOE. This action was initiated in the United States Court of Federal Claims on January 14, 2004 and has been assigned Case Number 04-0037 C. This action covered damages incurred from January 1, 1998 to December 31, 2005. Progress obtained a judgment for \$82.8 million. The DOE appealed that judgment, and the appeal resulted in a remand with respect to one aspect of the damages calculation. The new damages calculation will result in additional damages awarded to Progress Energy (up to \$9 million). The remand hearing was February 16, 2011, and the court has not yet ruled as to the amount of the additional damages. Progress Energy is collecting damages data for the time period 2006-2010 and intends to file a new lawsuit by the end of 2011 for the additional damages. PEF initiated legal action because it incurred damages due to DOE's breach of its spent fuel contract.

- a. Please update staff as to the status of this case and how it has, and currently, effects DEF's (former Progress Energy Florida's) customers.
  - b. Please detail how this case currently effects DEF's 2014 Decommissioning Cost Study.
16. Please confirm that the costs for construction of an on-site ISFSI for CR3 were not included in DEF's 2010 Decommissioning Study.
17. Must DEF obtain an NRC order allowing for the SAFSTOR option for CR3 to be employed? Will the Company please describe the NRC process for obtaining approval of the SAFSTOR option.

Nuclear Decommissioning Trust Fund and Annual Accrual

18. Please provide the NRC minimum decommissioning fund requirements for CR3.
19. Please explain the extent to which DEF's collections made to assure the availability of adequate decommissioning funds exceed the minimum NRC requirement. Please include copies of any correspondence to or from the NRC regarding this matter.
20. Please explain how DEF is complying with NRC requirements as they pertain to control of the NDT Fund.
21. Please explain how DEF is complying with NRC requirements as they pertain to management of the investments in the NDT.
22. Please explain whether DEF has requested any exceptions to the NRC guidelines on decommissioning reserves. If so, please provide copies of any related correspondence to or from the NRC regarding this matter.
23. Should a minimum NDT fund earnings rate be imposed?
  - a. If the response to Request No. 23 is affirmative, please explain how that rate should be determined.
24. Does DEF believe that current escalation rate of 2.8% is below any typical range due to the current macroeconomic market conditions that have reduced escalation factors to near all-time lows? Given that the funding status is highly dependent on assumed escalation rates, please explain why DEF believes its 2.8% assumed escalation rate is appropriate to use in this proceeding.
25. Please explain DEF's investment strategy for its NDT. Please discuss in detail the objectives and guidelines governing the trust funds, such as dollar/portfolio size limitations on issuers, and any other restrictions or constraints.
26. Please provide a detailed breakdown of the trust fund portfolio by type of securities held, maturity composition (average maturity), credit rating of fixed income investments, and other relevant categories.
27. Please discuss the relationship DEF has with the trustee of its NDT funds from the inception of the trust through the present. Please include in this discussion an explanation of how the trustee was selected, whether or not the trustee is affiliated with the utility, and how the trustee or its role has changed over time.
28. Please discuss the relationship DEF has with the fund manager of its nuclear decommissioning trust funds from the inception of the trust through the present. Please

include in this discussion an explanation of how the fund manager was selected, whether or not the fund manager is affiliated with the utility, and how the fund manager or its role has changed over time.

29. Please provide a schedule detailing the trustee fee, investment manager fee, and the total administrative costs (all costs as a percentage of average asset balance) for DEF's NDT for the calendar years 2010, 2011, 2012, and 2013.
30. Please provide a schedule detailing the nuclear decommissioning trust fund performance (calculated net of administrative costs on an after-tax, time weighted rate of return basis as of 12/31/2013) relative to the Consumer Price Index (CPI) for the past one year, two years, three years, five years, ten years, and since inception.
31. What are the legal investment constraints on the NDT? Does DEF have any additional investment constraints? Please explain.
32. Please provide the most recent status report DEF submitted to the NRC on its decommissioning funds.
33. Please identify when DEF is scheduled to submit its next report to the NRC that provides an update on the funding status of the NDT. Please provide a copy of the report when it is submitted to the NRC.

Decommissioning Study

This section refers to the *Site-Specific Decommissioning Cost Estimate for the Crystal River Unit 3 Nuclear Generating Plant* (Document No. P23-1680-001, Rev. 0), prepared by TLG Services, Inc.

34. For the purposes of the following request, please refer to Duke's 2014 Decommissioning Study, page xvi of xx.
- a. In the first paragraph on this page, beginning with "Spent Fuel Management," it is stated that spent fuel management expenses incurred prior to June 3, 2013 are not included in this (forward looking) estimate. How has DEF been recovering historical spent fuel management costs?
  - b. Regarding the fourth paragraph on this same page, please explain why this cost estimate does not reflect the escalation of costs due to "inflationary and market forces" during the decommissioning period, and why Duke Energy believes this is the best approach for future cost determination.
  - c. Did Duke's 2010 Decommissioning Study contain escalated decommissioning costs that capture inflationary and market forces?
35. For the purposes of the following request, please refer to Duke's 2014 Decommissioning Study, page xviii of xx.
- a. Footnote number [2] describes various costs to be incurred over the next few years. Please elaborate on what "legacy waste from the site" is, and where this waste is to be disposed.
36. For the purposes of the following request, please refer to Section 1, page 4 of 9. The second paragraph reads, "submittal of these notices will entitle the licensee to a fee reduction." What fee is reduced for the licensee, and what cost is this fee intended to address?
37. For the purposes of the following request, please refer to Section 2, page 2 of 7. The first bulleted point states "[c]reation of an organizational structure to support the decommissioning plan and evolving emergency planning and site security requirements." Please elaborate on the make-up of the "organizational structure," and what "evolving emergency planning and site security requirements" may entail.
38. For the purposes of the following request, please refer to DEF's 2010 Decommissioning Cost Estimate (TLG Study), Section 3, Page 7 of 35, and DEF's 2014 Decommissioning Cost Estimate, Section 3, page 6 of 24.
- a. Please explain, with specificity, the basis for adjusting the final fuel pick up dates from 2072 in the 2010 Study, to 2036 in the 2014 Study.

- b. What other Commercial Nuclear Power Generator has currently assumed a 2032 (or thereabout) start date for spent fuel pick-up by the DOE?
  - c. What other Commercial Nuclear Power Generator has currently assumed an approximate five-year timeframe for completion of the spent fuel transfer to the DOE?
39. For the following, please refer to Section 3, Page 12 of 24, Subsection 3.4.7. Please identify the rates assumed for off-site processing. Please explain in detail the reason for differences in off-site processing rates between the 2010 and 2014 Decommissioning Cost Studies.
40. Please refer to Section 5, Page 4 of 4, Table 5.1.
- a. Please provide a comparison of the volume of radioactive waste between the 2010 and 2014 decommissioning studies.
41. Please refer to Appendix A of the Decommissioning Study, Unit Cost Factor Development.
- a. Please explain the reasons for the decrease in the radiation/ALARA adjustment from 37% in 2008 to 15% in 2015.
  - b. Do the labor rates shown on page 3 of 4 assume in-house labor rates or contract labor rates or a combination of both? Please explain the basis for the assumption.
  - c. Do the labor rates reflect loaded labor rates? If affirmative, what portion of each rate is associated with the base rate, labor overhead (including fringe benefits), and general and administrative overhead?
  - d. Please provide an explanation and derivation of the 16.0% Overhead & Profit on the Equipment and Materials line item on page 3 of 4.
  - e. Please explain how the labor rates on page 3 were determined, identifying any assumptions.
42. The Property Tax activity reflects a continuing tax obligation over the life of the decommissioning program. Did DEF consider assuming no significant value for site structures and including only a value on the protected area of the land during active decommissioning and only on ISFSI footprint thereafter? Please explain why or why not. Please comment on the reasonableness of such a change in assumptions.
43. Please refer to Appendix C of the Decommissioning Study, beginning on Page 2 of 10.
- a. What costs are "Corporate Allocations" (Line Nos. 1.2.3 and 1.2.6) intended to address?
  - b. Please detail what costs line item 2a.2.1 "ISFSI Construction & Pool Offload" are intended to address, specifically "ISFSI Construction."

Spent Fuel Management

44. Please briefly describe the contemplated design for the ISFSI to be located at the Crystal River Plant Site.
45. Regarding Section 3, Table 3.3 "Spent Fuel Management Expenditures" of DEF's 2014 Nuclear Decommissioning Cost Study,
  - a. What are the types of costs included in the column labelled "Other?"
  - b. What are the processes or activities requiring the expenditures shown under the column labelled "Energy?"
  - c. What are the annual costs of the following spent fuel management components, and in which columns of Table 3.3 are the costs contained: purchase of dry shielded canisters, loading and transferring of dry shielded canisters, insurance, licensing fees, staffing, security (costs identified in Section 3.4.1, Pages 6 and 7 of 24)?
  - d. Provide additional detail of the labor costs shown for the period 2013 through 2019 which identifies with greater specificity the type of labor or the type of projects involved.
  - e. How did DEF estimate its labor costs shown in this table?
46. Regarding Section 3.4.1 of DEF's 2014 Nuclear Decommissioning Cost Study, ISFSI, why are the dry shielded canisters not considered part of the construction costs of the ISFSI, but the horizontal storage modules are considered part of those costs?
47. What is the basis for DEF determining that 2021 represents a near term spent fuel disposition scenario and 2048 represents a long term spent fuel disposition scenario, as discussed in Section 1, Page 6 of 9 of DEF's 2014 Nuclear Decommissioning Cost Study?

Contingency

48. In the decommissioning experience of TLG, please identify some of the activities in which contingency dollars have been used to respond to, compensate for, and/or provide adequate funding of decontamination and dismantling tasks.
49. Referring to Section 1, page 3 of 8, of DEF's 2014 Nuclear Decommissioning Cost Study Summary:
- a. Please explain in detail how the 13.5% overall contingency allowance used in the current cost study was developed.
  - b. [While staff understands that the Company was proposing the DECON option in its 2010 study, for the purposes of this request, staff is seeking to compare the SAFSTOR option that was also presented in the same study.] Please explain why the contingency factor of 13.5% used in the current study is lower than what was used in the Company's 2010 Decommissioning Study which was 16.2% (Sourced from the last line of Table D, *Crystal River Nuclear Plant, Unit 3, SAFSTOR Decommissioning Cost Estimate*, on page 14 of Attachment D of the Company's 2010 Update – 2008 Nuclear Decommissioning Cost Study).
50. Please refer to the Decommissioning Cost Study Section 3, pages 3 thru 4 of 24:
- a. Please provide the rationale for adding four new major activity-related problems (Low-Level Radioactive Waste Processing, Spent Fuel Transfer, ISFSI Decommissioning and Operations and Maintenance) upon which the contingency factors were applied from the 2010 to the 2014 Decommissioning studies.
  - b. For each of the new major activity-related problems discussed in 50a., please explain how the associated contingency value was determined.
  - c. Please list a few examples of unforeseeable events that the aforementioned contingency values addresses.

End-of-Plant-Life Materials & Supplies and Last core of Nuclear Fuel

51. What was DEF's unrecovered cost of End-of-Life Materials and Supplies (EOL M&S) inventories for CR3 as of December 31, 2013?
52. What have been the debits to nuclear maintenance expense for EOL M&S inventories and credits to Account 228 (Reserve) for CR3 for each year from 2010 through 2013?
53. What was DEF's amortization expense recorded in 2013 for EOL M&S for CR3?
54. What was DEF's unrecovered cost of the End of Life Last Core (Last Core) of Nuclear Fuel for CR3 as of December 31, 2013?
55. What have been the annual amortizations to fuel expense associated with the Last Core and the credits to Account 228 (Reserve) for each year from 2010 through 2013?
56. What does DEF anticipate is the future disposition of any unamortized balance of EOL M&S inventories and its Last Core?

Effective Dates

Due to Duke's recent Revised and Restated Settlement Agreement (Order No. PSC-13-0598-FOF-EI), staff is explicitly seeking the Company's position on effective dates for recovery of certain items contained in its study.

57. What is Duke's proposed effective date for its annual decommissioning accrual amount?
58. What is Duke's proposed effective date for the amortization of its EOL M&S inventories?
59. What is Duke's proposed effective date for the amortization of its Last Core?

Request for Documents

1. Please provide a copy of the AIF/NESP-036 study report, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates" upon which contingency values were based.
2. Please provide a copy of the "Local Labor Rates" schedule utilized in developing Unit Cost Factors for DEF's 2014 Decommissioning Study.
3. Please provide a copy of the "Building Construction Cost Data" published by R.S. Means in DEF's 2014 Decommissioning Cost Study.
4. For the purposes of the following request, please refer to Duke's 2014 Decommissioning Study, page xi of xx. Please provide a copy of the *Life of Plant Agreement* with EnergySolutions for disposal of its Low-Level Class B and C nuclear waste from CR3.
5. Please provide a copy of the "Acceptance Priority Ranking & Annual Capacity Report," DOE/RW-0567, July 2004.
6. Please provide working papers, in Microsoft Excel (Excel) format with formula intact, to support your response to Request No. 49.
7. Please provide "Appendix C" of the 2014 Decommissioning Study, titled "Detailed Cost Analysis" in Excel format, with cells unlocked and formulas intact.
8. Please provide a copy of a working file in Excel format with all formulas and links intact of Table 2.1 (Section 2) of the 2014 Nuclear Decommissioning Cost Study Summary.
9. Please provide a copy of Towers Watson's U.S. Capital Market forecast, dated July 1, 2013.
10. Please provide a copy of Towers Watson's most recent U.S. Capital Market forecast.
11. Please provide all work papers used by Towers Watson to develop the escalation rate of 2.8%. Please include all source materials relied upon by Towers Watson to develop its escalation rate.
12. Please provide all work papers used by Towers Watson to determine the minimum fund earnings rate of 5.10%. Please include all source materials relied upon by Towers Watson to develop the minimum fund earnings rate.