BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Progress Energy Florida for approval of an increase in its base rates and charges effective January 1, 2010.

DOCKET NO. 090079-EI

Submitted for filing: August 31, 2009

REBUTTAL TESTIMONY
OF
JOE W. DONAHUE
On behalf of Progress Energy Florida

In re: Petition for rate increase by Progress Energy Florida, Inc.

Docket No. 090079-EI

REBUTTAL TESTIMONY OF

JOE W. DONAHUE

I. **Introduction and Purpose.**

Q. Please state your name, position, and business address.

A. My name is Joe W. Donahue. I am a VP-Nuclear Engineering & Services for Progress Energy Florida ("PEF" or the "Company"). My business address is 410 S. Wilmington Street, Raleigh, NC 27601.

Q. What are your duties and responsibilities?

A. My responsibilities include negotiating and managing the uranium mining, conversion, enrichment, and nuclear fuel fabrication contracts for both Progress Energy Carolinas, Inc. ("PEC") and Progress Energy Florida, Inc. ("PEF"). I am responsible for making sure the PEC and PEF nuclear generation power plants, including Crystal River Unit 3 ("CR3"), have sufficient nuclear fuel, on time, and at a reasonable cost.

Q. Please describe your educational background and work expertise?

A. I earned a Bachelor of Science degree in Nuclear Engineering from the University of Massachusetts at Lowell. I joined Progress Energy in 1994 as Plant General Manager at the Harris Nuclear Plant. I became vice president of the Nuclear Engineering & Services department in December 2000 and currently oversee

Nuclear Fuels, Nuclear Materials, License Renewal, Chief Engineering and NGG Fleet Major Project's sections.

Before joining Progress Energy, I worked for the Texas Utilities and Arizona Public Services serving in various management positions. I have held positions in nuclear plant start-up, plant operations, plant management and managing large projects. I spent two years (1998-2000) on assignment with the Institute of Nuclear Power Operations leading 20-person teams evaluating management practices at over ten nuclear plants. I currently serve on the Pressurized Water and Boiling Water Reactor Owners Groups and EPRI Nuclear Power Council, Material and NDE executive management committees.

Q. Have you reviewed the Intervener Testimony filed in this Docket?

A. Yes, I have. I have reviewed and I will provide rebuttal testimony to portions of the intervener testimony of Helmuth Schultz III ("Schultz"), filed on behalf of the Office of Public Counsel ("OPC"). Specifically, I will rebut the Schultz testimony with respect to the Company's nuclear fuel balance.

Q. Have you prepared exhibits to your testimony?

A . Yes. I sponsor the following exhibit, which is attached to my prefiled testimony:

- Exhibit No. ___ (JWD-1), which is a corrected calculation of Schultz Exhibit HWS-1, Schedule B-3.

This exhibit is true and accurate.

Q. Intervener witness Schultz states that the Company's requested net nuclear fuel 13-month average balance of $155.017 million is not supported by the Company's witness and/or the filing. Is this statement accurate?

A. No it is not accurate. Progress Energy has provided a number of schedules that support the net nuclear fuel projected balance. The Minimum Filing Requirement Schedule B-16 details the balance sheet accounts which captures all nuclear fuel activity from 2008-2010. Schedule F-8 only states the amount of natural (non-enriched) uranium inventory purchases in 2009 and 2010 which have not been assigned to a specific reload.

Q. Do the nuclear fuel purchases shown in Schedule F-8 reflect all nuclear fuel inventory procurement costs forecasted in 2009 and 2010?

A. No. The $41 million in purchases for 2009 represents natural uranium inventory procurement, which is only part of the fuel expenditures. The Company inadvertently failed to include an additional $38 million for the cost of reload batch-specific services (uranium enrichment, fabrication manufacturing and engineering charges) necessary due to a refueling outage in 2009. Thus the total expense in 2009 that should have been reflected on Schedule F-8 is approximately $79 million. Crystal River 3 ("CR3") does not have a refueling outage in 2010 and there are no significant reload-specific expenditures. Therefore the natural uranium inventory purchase, of approximately $29 million,

represents the total forecasted expenditures for 2010 and was correctly reflected on Schedule F-8.

Q. Was the correct figure for 2009 projected nuclear fuel procurements reflected elsewhere in the Company's filing?

A. Yes, the Company provided monthly expenditures for nuclear fuel activity in its Schedule B-16, and the total of those numbers (specifically Accounts 120.1 through 120.4) yields a figure of approximately $75 million for 2009.

Q. It appears that the amount stated in F-8 for 2009 should have been $79 million as opposed to the approximate $75 million in B-16. Why is this?

A. When the Company was preparing the Schedule B-16, this $4 million understatement was discovered in the review process, but the decision was made not to correct the Schedule because the understatement was considered conservative while not having a significant impact on the Company.

Q. Has the Company increased its nuclear fuel inventory levels for 2009 and 2010?

A. Yes, the Company has increased its nuclear fuel inventory levels for Crystal River Unit 3 ("CR3").

Q. Before explaining why the Company has increased the inventory, can you please briefly describe the components of nuclear fuel that are used at CR3?

A. Yes. Nuclear fuel begins with uranium, which must be mined from the ground using various mining techniques. This raw uranium ore is then milled near the mine to produce an oxide called U308. Another industry term for U308 is "yellowcake." Uranium is found in many locations worldwide. Uranium is a common mineral so there is little risk that there will be insufficient uranium to meet current and future nuclear energy production needs. Currently, however, there are limited open uranium mines due to historically depressed uranium prices. As uranium prices rise, which recently occurred, expansions of existing mines and the development of new mines are expected to meet demand.

The next step is the chemical conversion of the U308 to UF6, which reaches a gaseous state when heated. Any impurities are removed during this chemical process and the process of converting the UF6 to a gas is necessary for the next step in production. This step is the enrichment process. Existing reactors use uranium with a higher percentage of the U-235 isotope than is found in nature. Natural uranium contains 0.711 percent U-235, while CR3 needs approximately 4 percent to 5 percent U-235. The enrichment process raises the UF6 from 0.711 percent U-235 to 4 percent to 5 percent U-235.

The final step is to take the enriched UF6, change it to a powder, press and sinter the powder into ceramic pellets, feed the pellets into tubes in a pre-set order with inert elements, seal the tubes (thereby forming "fuel rods") and bundle them

together into fuel assemblies. This is the fabrication process. Once the fuel assemblies are complete, they are shipped to the CR3 plant site for insertion into the nuclear reactor.

Q. Why has the Company increased its nuclear fuel inventory levels for 2009 and 2010?

A. The Company's inventory plan for nuclear fuel is to maintain inventory for the uranium and conversion components of the nuclear fuel. Every other year, CR3 has scheduled fuel outages in which approximately one half of the nuclear fuel assemblies are replaced. PEF currently plans to maintain sufficient inventory of uranium and conversion in the amount of one reload for CR3. This target inventory for uranium is 400,000 kilograms uranium (KgU) and will represent an investment of approximately $80 million in 2010 (or $200/KgU). This inventory level allows a minimum of over two years of forward operation of CR3, which the Company deems adequate to obtain alternate fuel supplies if that were to become necessary.

Q. What is the objective of the Company's nuclear fuel inventory target level for uranium?

A. The Company's main objectives are to maintain an inventory level for uranium that provides for working stock, protects against supply interruption, and acts as a

financial hedge to buffer against potential volatility in the nuclear price. Working stock refers to the uranium which is built up and consumed in cycles corresponding to the reload schedule. Working stock is needed to reconcile the delivery schedules from uranium producers with the two year refueling calendar for CR3, considering the lead times required by the suppliers of intermediate and final processing services. Working stock also allows for late changes to refueling requirements to provide an optimal match between the reactor's energy requirements and the fuel reload. Finally, working stock balances the small variations between design and as-manufactured uranium content.

The inventory level (also referred to as "strategic inventory") is also necessary to guard against potential supply interruptions. Strategic inventory is a uranium stockpile that we do not expect to consume except in rare emergency situations. Progress Energy obtains its uranium from worldwide sources. Given the relatively few number of uranium producers, and the location of those producers, it is important for the Company to have a sufficient inventory to protect against an interruption in the fuel supply. CR3 is on a two-year refueling calendar, so it is essential to ensure that the Company has the uranium needed to make the reload schedule.

The uranium inventory also insulates ratepayers from potential large swings in nuclear fuel cost associated with volatile prices for individual deliveries. By having uranium in inventory, Progress Energy has the freedom to evaluate what the most cost-effective purchase is at the time the purchase is made. If the spot market price of uranium is higher than the cost of the inventory uranium, PEF can use the

inventory uranium for that fuel reload, which allows flexibility as to when the Company must enter the market for uranium purchases. As experienced in 2006-2007, uranium prices can increase tremendously merely on market sentiments without any real supply interruption – in the event of a significant disruption in supply or transportation, available supply could become extraordinarily costly if available at all.

Q. What is the objective of the Company's nuclear fuel inventory target level for UF6 or conversion?

A. The Company's main objective is to maintain the inventory in the more flexible and immediately useful form of UF6, which includes conversion, thus reducing the risk of supply interruption at the conversion stage. Conversion is relatively low-cost (about 3% of the total fuel cost), yet it is one-fourth of the entire fuel cycle. Maintaining this inventory represents "insurance" against potential interruptions (e.g. a recent industry event: the shutdown of the Port Hope Facility due to a shortage in the supply of hydrofluoric acid). Currently Progress Energy only obtains conversion from a producer in Canada, although primary conversion supply is available in the United States, France, Russia, and the U.K. , albeit the number of facilities are very limited (one per country). It is important for Progress Energy to keep conversion in inventory to ensure that UF6 is available for the other components to be completed in time for the refueling outages at CR3 every two years.

Q. Why doesn't PEF maintain inventory for the other components of nuclear fuel, the enrichment and the fabrication processes?

A. The enrichment and fabrication processes are expensive components of the nuclear fuel. Unlike UF6, these components are also very specialized and not easily transferable between reloads to meet emergent needs. Based on the availability of vendors who can complete this work and the risk being offset, PEF does not see a benefit in maintaining inventory at this time for these components. PEF does regularly monitor its nuclear fuel inventory plans, and it may begin holding such components in inventory if the balance of risk and economics deem necessary. At this time, for 2010, PEF does not plan to maintain inventory for enrichment or fabrication.

Q. Does Schultz recommend an adjustment to the Company's proposed nuclear fuel balance?

A. Yes, he recommends reducing the Company's request for Net Nuclear Fuel of $155.017 million by $32.766 million ($26.752 million jurisdictional). He would therefore only allow $122.251 million for Net Nuclear Fuel. (Testimony p. 5)

Q. How does Schultz make this calculation?

A. Mr. Schultz explains, in page 5 of his testimony, that he uses the $41 million of nuclear fuel purchases in 2009 from Schedule F-8 as the basis for his calculations

Exhibit HWS-1, Schedule B-3. The $41 million was misstated in Schedule F-8 as detailed earlier in my testimony.

Q. What effect did this incorrect figure have on Schultz's calculation?

A. The 13-month average Net Nuclear Balance ended December 2010 is under-stated by $34 million.

Q. Did Schultz make any other errors in the calculations he provided in his Exhibit HWS-1, Schedule B-3?

A. Yes. As reflected on page 6, line 3 of the Schultz testimony, Schultz deducted one-twelfth of the amortization included on Schedule B-16. However, Schultz neglected to include June 2010 amortization expense of $3.359 million in the total amortization figure. Adding the June 2010 expense would bring the total approximate amortization to $39.642 million, rather than the $36.283 million he calculated in his testimony.

Q. After correcting witness Schultz's calculations to account for the correct 2009 nuclear expense and the total amortization figure, what is the average Net Nuclear Fuel balance using Schultz's methodology?

A. Making those corrections, and using Schultz's methodology, results in a Net Nuclear Fuel balance of $154.709 million, as compared to the $122.251 million

shown in his testimony. These corrected calculations are shown on my Exhibit No. ___ (JWD-1).

Q. What has the Company included as its requested Net Nuclear Fuel balance?

A. As shown on Schedule B-16, the Company is requesting $155.017 million. This is just $308,216 ($251,646 on a jurisdictional basis) higher than Schultz's proposed adjustment, after correcting the errors. This is a percentage difference of 0.2%.

Q. What accounts for the difference between average Net Nuclear Fuel balance shown in the B-16 and the corrected calculation of witness Schultz?

A. Schultz's calculation is a less precise form of the PEF calculation included in our filing. Using Schultz's methodology, monthly amortization charges are summed over a calendar year, and then included as an average value for each month of the year. This type of an alternate calculation can only provide an *estimate* of the correct costs for rate recovery. Thus there will be differences between the B-16 figure and Schultz's methodology due to rounding assumptions and using averaged values for amortization and expenditures rather than the original inputs.

Q. What is the appropriate amount of Rate Base Adjustment that should be made given as a result of these Nuclear Fuel calculations?

A. There should be no adjustments made to Schedule B-16. As reflected in the Company's original filing, as supplemented and further explained by my rebuttal testimony, the Company's requested Net Nuclear Fuel Balance is reasonable and appropriate. The Commission should approve the Company's request with no adjustments.

Q. Does this conclude your testimony?

A. Yes it does.

PROGRESS ENERGY FLORIDA, INC.
Projected Test Year Ended December 31, 210

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Exhibit JWD-1

Rate Base Adjustment - Nuclear Fuel ($000s)

Line No.	Month	2008	2009	2010	Reference
	Per Company				
1	December	78,852	106,080	159,832	a
2	January	77,189	103,777	156,436	a
3	February	75,175	104,270	160,328	a
4	March	74,633	102,878	156,856	a
5	April	72,528	101,828	153,497	a
6	May	70,574	128,750	157,743	a
7	June	94,762	133,790	154,384	a
8	July	92,570	140,164	150,913	a
9	August	90,721	137,821	154,951	a
10	September	95,282	143,245	152,152	a
11	October	94,351	158,599	155,951	a
12	November	99,098	158,599	152,591	a
13	December	106,080	159,832	149,585	a
14	Average	86,293	129,203	155,017	a
	Per Citizens				
15	December	78,852	106,080	125,893	
16	January	77,189	107,731	125,286	
17	February	75,175	109,382	124,679	
18	March	74,633	111,033	124,072	
19	April	72,528	112,685	123,465	
20	May	70,574	114,336	122,858	
21	June	94,762	115,987	122,251	
22	July	92,570	117,638	121,644	
23	August	90,721	119,289	121,038	
24	September	95,282	120,940	120,431	
25	October	94,351	122,591	119,824	
26	November	99,098	124,242	119,217	
27	December	106,080	125,893	118,610	
28	Average	86,293	115,987	122,251	
29	Nuclear Fuel Adjustment			(32,766)	L.28-L.14
30	Nuclear Fuel Adjustment Jurisdictional @ .81646			(26,752)	

Source : (a) Company Schedule B-16

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Rate Base Adjustment - Nuclear Fuel ($000s)

Line No.	Month	2008	2009	2010	Reference
	Per PEF's Revision of Citizen's Calculation				
15	December	78,852	106,080	159,832	
16	January	77,189	110,560	158,978	
17	February	75,175	115,039	158,124	
18	March	74,633	119,518	157,271	
19	April	72,528	123,998	156,417	
20	May	70,574	128,477	155,563	
21	June	94,762	132,956	154,709	
22	July	92,570	137,436	153,855	
23	August	90,721	141,915	153,001	
24	September	95,282	146,394	152,147	
25	October	94,351	150,874	151,293	
26	November	99,098	155,353	150,439	
27	December	106,080	159,832	149,585	
28	Average	86,293	132,956	**154,709**	
29	Nuclear Fuel Adjustment			(308)	L.28-L.14
30	Nuclear Fuel Adjustment Jurisdictional @ .81646			(252)	

Note: The 308k difference is the difference in methodology for generating the amount of amortization we collect.

Looking at the information in the spreadsheet you can see that what Progress collects per month varies so OPC's method of approximation has the potential to add an error.