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Electronic Filing

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b. Docket No. 090505-EI

In re: Review of replacement fuel costs associated with the February 26, 2008 outage on Florida Power & Light Company's electrical system.

c. Document being filed on behalf of Office of Public Counsel

d. There are a total of 41 pages.

e. The document attached for electronic filing is Citizens' Brief.

(See attached file: 090505 brief final.sversion.doc)

Thank you for your attention and cooperation to this request.

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03010 APR 19 2010

FPSC-COMMISSION CLERK

4/20/2010

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Review of Replacement Fuel Costs) Docket No. 090505-EI
Associated with the February 26, 2008 outage)
On Florida Power & Light's electrical system) Filed: April 19, 2010
_____)

CITIZENS' BRIEF

Pursuant to Florida Public service Commission Order No. PSC-09-0854-PCO-EI issued December 30, 2009, the Citizens of Florida, through the Office of Public Counsel, file this brief.

Issue 2: How should the replacement power costs attributable to the February 26, 2008, outage be measured, and what is the amount of such costs?

OPC Position: *FPL "accepted responsibility" for costs attributable to Flagami-caused outages; however, it wants to reduce the refund from \$15.9 million of actual replacement power costs to \$2.024 million. FPL's calculation artificially truncates the 158 hours of lost nuclear generation to 8, and creates the fiction that the replacement costs supplanted—not economical nuclear generation—but system average costs. FPL tries to replace cause-and-effect with a baseless claim of "new risks" and a contrived distinction between "transmission costs" and "generation costs." The Commission should see in FPL's claim of "disincentives" the distorted view that Florida's regulatory policy should be to impose on customers the excessive costs of utilities' mistakes. The Commission should require FPL to refund the full \$15.9 million to customers.*

EXECUTIVE SUMMARY OF ARGUMENT

In a stipulation that should have streamlined this proceeding, FPL said it accepted responsibility for the replacement power costs attributable to the Flagami substation breakdown. However, at hearing FPL demonstrated that it instead is resisting any meaningful refund with all of the effort and energy it can muster. Using information supplied by FPL, OPC witness Dr. Dismukes calculated the incremental

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costs of the Flagami failure that precipitated the loss of 4,300 MW of generation, including two economical, base-loaded nuclear plants that were operating at full power at the time of the incident, to be \$15.9 million. Having accepted responsibility for costs attributable to the Flagami incident, FPL offered to refund only \$2.042 million. The differences in approach are revealing. OPC's witness reconstructed actual time frames and incorporated the costs that were either incurred or avoided during those periods. By contrast, FPL's arguments are replete with efforts to persuade the Commission to substitute fiction for reality.

For example, FPL wants the Commission to limit the time frame during which replacement power costs are to be measured to eight hours. This is based upon FPL's assertion that at the end of the eight hour period the impact of the Flagami substation failure on its system was over, and that its ability to operate its generation fleet according to the criterion of economic dispatch (that is, minimizing customers' costs by committing generators in the order of ascending operating costs) was "back to normal." Two base-loaded nuclear generators, which were operating at full power and providing customers some of the most economical energy of which FPL is capable prior to the Flagami incident, were shut down by the disturbance and remained unavailable to the dispatcher, and FPL's customers, far beyond the 8 hour period. What is "normal" about that situation?

FPL offered a fallback position of 48 hours, based on its assertion that 48 hours represents the typical time frame in which a nuclear unit that has been shut down can be restored to service. However, the same FPL witness who identified the 48 hour time frame felt constrained to add that this period is typical only of a situation involving an

outage of a single nuclear generator. In this instance, when one adds Unit 3 and Unit 4, the answer is 2—as in two shut-down, off-line nuclear generators. According to FPL, the typical time frame associated with bringing *two* out-of-service nuclear generators back on line is a range of 3 to 5 days. Therefore, what reason can FPL have in suggesting a time frame for restoring Turkey Point Units 3 and 4 that it knows is not representative of the facts, other than its desire to avoid its responsibility and understate the refund to customers?

The period of 3 to 5 days to which FPL's witness testified is typical of efforts to restore *two* nuclear units to service and translates to a range of 72 hours to 120 hours. The period of 3 to 5 days is required to place the units on line, which means "closing the breakers." As part of the start-up and return protocol, nuclear units are placed on line at low levels of output and are then very gradually ramped up to full power. The on line milestone of the procedure is far different than full power status, where Turkey Point Units 3 and 4 were when the Flagami disturbance caused them to shut down. After the units came back on line and until they reached full power, the Flagami failure was still impacting the amount of economical nuclear generation that had to be replaced with more expensive power. The evidentiary record shows another 12 to 14 hours are required to advance from "closing breakers" to full power. Therefore, what reason would FPL have to suggest a time period that it knows would understate the time necessary to return the operating status of the nuclear units to that which the Flagami episode disrupted, other than its desire to shirk its responsibility and reduce the refund to customers?

When one adds the 12-14 hours required to ramp the production to full power to the range of 72 to 120 hours, the result is a range of approximately 84 to 134 hours. Not surprisingly, FPL's witness said he was describing a straightforward, uncomplicated start-up and return to service. The record demonstrates that the actual start-up efforts were complicated by factors and circumstances that added to the duration of the outages and for which FPL is responsible. The "typical" values do not fairly represent the actual experience. We know that Turkey Point Unit 3 was *actually* down for 158 hours, and Turkey Point Unit 4 was *actually* down for 107 hours. What reason would FPL have to try to substitute hypothetical time periods for actual hours, other than its desire to sidestep its responsibility and understate the refund to customers?

FPL says that, in any event, the replacement power cost ("RPC") and associated refund should be measured, not in terms of the full differential between the low fuel cost of 0.44 cents/kWh for lost nuclear generation and the cost of the replacement power that FPL actually incurred, but by the smaller differential between *system average costs* of 5.13 cents/kWh and the cost of the power that was actually incurred. However, the "R" in RPC stands for *replacement*. We know for a fact that the power that FPL actually replaced was the lost nuclear generation; therefore, why would FPL suggest the use of system average costs, except to narrow the differential and lower the refund to customers?

FPL argues that the use of system average costs to measure the refund is necessary to avoid a disincentive to invest in future nuclear power projects and renewable energy technologies. Let's consider the following. The Flagami failure caused the two nuclear units to shut down on February 26, 2008. Some *seven months*

later, in response to a Staff interrogatory in the 2008 fuel cost recovery docket, FPL measured the replacement costs attributable to the Flagami failure and related unit outages by comparing the actual costs incurred—not to a “system average” proxy—but to the low cost of the lost nuclear generation. Asked why it recognized the full magnitude of the differential between nuclear fuel costs and replacement power costs in the fuel cost proceeding, but then changed the nature of its calculation to employ the system average proxy in lieu of nuclear fuel costs in this spinoff case, FPL explained that seven months after the incident it “had not evaluated the disincentive” that the full calculation would entail. In other words, seven months after the February 26, 2008, Flagami episode, the idea of lowering the calculated refund by substituting the system average proxy for the low nuclear fuel costs and attributing the measure to the need to avoid a “disincentive” still had not occurred to FPL. What reason would FPL have to advance a proposition that is so obviously and conspicuously an afterthought, other than to avoid its responsibility and reduce the refund to customers?

In support of FPL’s afterthought defense, FPL’s consultant, Dr. Avera, said that investors would be surprised to learn that they bear the risk of adjustments for nuclear outages when there is no claim that FPL was operating the nuclear units imprudently at the time the transmission event shut them down. However, Dr. Avera was a consultant to an electric utility in a 1993 situation in which two regulatory agencies held the utility responsible for lost nuclear generation caused by a transmission event that impacted a nuclear outage. And FPL has declared numerous times to investors and the public alike that the Commission has authority to disallow any and all costs that it finds to be

imprudent or excessive. In light of these matters, how can Dr. Avera or any investor profess surprise?

Dr. Avera also testified that investors regard the fuel cost recovery mechanism as unfairly asymmetric. Yet, doesn't the fuel cost recovery clause enable FPL to recover 100% of its reasonable fuel costs, even if a true-up with interest added is required to accomplish that recovery? And didn't FPL recover \$6.1 billion of fuel costs through the fuel cost recovery mechanism in 2008? What is not for an investor to like?

Dr. Avera further testified that FPL witness Yupp's refund calculation appropriately segregates "transmission costs" from "generation costs" because no one claims that FPL was operating the nuclear units imprudently at the time they shut down. The Flagami incident also caused the shutdown of other generators, and specific generators are represented in FPL's calculation of the replacement fuel costs. No party has claimed that FPL was operating either the nuclear units or those other units imprudently at the time of the outage. That being the case, what logic supports the view that some generation costs are really transmission costs, but other generation costs are not transmission costs, other than the "logic" that the costs that FPL wants to cull from the calculation relate to nuclear units that have far lower fuel costs and that were out of service for a significantly longer period of time?

Dr. Avera denied OPC's proposition that FPL is compensated for the risk of disallowances measured by the difference between the cost of lost nuclear generation and the cost of the replacement power in the form of a corresponding increase in the return dollars associated with the larger capital investment that a nuclear unit requires. He asserted that, despite the fact that a utility will receive higher return dollars through

its investment in expensive-to-construct nuclear generators than it would in non-nuclear technologies that have lower capital costs, the utility will be “indifferent” as to its choice of investments. Notwithstanding Dr. Avera’s statement, FPL in its Form 10K cautions investors that regulation may have the effect of restricting FPL’s ability to grow earnings. Would this risk warning be warranted if FPL and its investors are truly indifferent as to the level of FPL’s earnings?

Dr. Avera also said that before the Commission requires a refund—even where it finds imprudence—it should consider the possibility of creating “perverse incentives” and “unintended consequences.” His statement is part and parcel of FPL’s effort in this case to exempt nuclear and renewable sources from the calculation of replacement power costs for future cases. However, isn’t the “unintended consequence” to be avoided that of signaling to utilities that they need not fear economic consequences of managerial errors, because in Florida the policy is that customers will absorb the excessive costs caused by those errors?

The bottom line is FPL’s assertion that, if the Commission were to regard lost nuclear generation as attributable to the Flagami breakdown and require FPL to refund \$15.9 million, investors will be unhappy. Yet, Dr. Avera agreed with OPC that a legitimate purpose of regulation is to ensure that utilities do not pass unreasonable costs to customers. He further agreed that the “downside” (risk of disallowance) perceived by investors is essentially the risk that management may fail to manage costs, and the regulators may do their job. That being the case, if the Commission protects FPL’s customers from the excessive costs caused by the Flagami episode, with whom should investors be unhappy?

Statement of the Case and of the Facts

Components of FPL's electric system contain protective devices that are designed to sense disturbances on the system and "trip," or remove and isolate, the components from the system before the disturbance can damage the facilities. The Flagami substation contains two levels of protection ("primary" and "secondary") that, when enabled, react to a disturbance by severing the substation from the system, thereby containing any disturbance originating from the substation within the site.

On February 26, 2008, an FPL field engineer employee tested a circuit switcher at the Flagami substation located in western Miami. Once there, he disabled both the primary circuit protection and the breaker failure protection, which is considered a secondary level of protection. He did not advise the FPL load dispatcher at the FPL Control Center that he had disabled the secondary level of protection as well as the primary protection. And the load dispatcher didn't tell the system operator at the FPL Control Center that any of the protection had been disabled. A shunt reactor and its associated circuit switcher operated live on the electric system for approximately 37 minutes with the two levels of protection disabled.

A fault occurred during the FPL engineer's activities which caused a 17 – 19 second arc, and because both layers of protection had been disabled, a three phase fault occurred on the 138 Kilovolt transmission system to which the Flagami substation was connected. This, in turn, led to significant frequency swings which tripped transmission lines and generators around portions of the lower two-thirds of Florida.

Almost 1 million customers of Florida Power & Light and other electric utilities were without service for some period of time. 56% of the customers were restored to

service within one hour, 84% of the customers within two hours, and all non-interruptible customers within three hours.

While FPL returned customers without service to the system relatively quickly, restoring the generators that the Flagami disturbance knocked off the system required more time. In all, the Flagami episode shut down 4,300 MW of generation. In addition to three gas-fired generators, the total included two nuclear plants, Turkey Point Units 3 and 4, which were out of service for 158 hours and 107 hours, respectively. These time frames were necessitated in part by the longer start-up periods associated with the nuclear technology, and in part by complications to start-up efforts that FPL encountered during the forced outages. In order to replace the power that would have been generated by these units, FPL ran other, less efficient plants and purchased replacement power at prices ranging from 12.5 to 29.8 cents per KWh from other entities.

Thereafter, the Federal Energy Regulatory Commission (FERC) ordered a formal investigation into the cause and events surrounding the blackout. The North American Electric Reliability Corporation (NERC) also opened a parallel Compliance Violation Investigation.

In September 2009, FPL entered into a stipulation and consent agreement with FERC and NERC requiring FPL to pay a civil penalty of \$25,000,000. \$10,000,000 was paid to the United States Treasury and \$10,000,000 to NERC. The agreement required FPL to spend the remaining \$5,000,000 on reliability enhancement measures. None of the payments address remuneration for the hundreds of thousands of customers who lost power during the outage; nor do the payments address the expensive replacement

power costs incurred by FPL and already charged to customers as a result of the outage.

In Docket No. 090001-EI, parties began to address the issues of the impact of the Flagami-caused cascading trips on the fuel costs that FPL incurred, and whether the higher replacement power costs should be borne by FPL or its customers. The Commission established separate Docket No. 090505-EI to consider these questions.

In December 2009, FPL entered into a Proposed Resolution of Issues (PRI) with the Office of Public Counsel and the Office of the Attorney General. In that agreement, FPL agreed to bear the cost of replacement power attributable to the incident; however, the appropriate measure of replacement power costs remained an issue to be determined by the Commission in this docket. The Commission held evidentiary hearings on March 17 and 18, 2010, to resolve this issue.

ARGUMENT

FPL Should Reimburse Customers for the Actual Replacement Power Cost

FPL claimed in its testimony that only the amount of \$2.024 million of higher replacement costs is attributable to the outages caused by the Flagami episode. FPL arrived at its proposed \$2.024 million refund by substituting fiction for reality and by requesting the Commission to ignore cause and effect, all for the purpose of largely exempting nuclear generation from the calculation of incremental fuel costs—thereby shifting its business risk to its customers. Using generating unit-specific fuel cost values, actual purchased power cost data, and actual unit outage time frames—all of which were supplied by FPL—OPC witness Dr. David Dismukes calculated the

incremental fuel costs associated with the Flagami-caused cascade of outages, beginning from the time of the Flagami substation incident to the point at which the Turkey Point nuclear units were restored to service, to be \$15.9 million. In the following sections, OPC will demonstrate the fallacious assumptions underlying FPL's calculations. OPC will also address the distorted "incentives" within the proposed regulatory rationale on which FPL relies to understate the refund that customers should receive as a result of the impact of the Flagami failure.

The only verifiable calculation of the full replacement power cost for the outage was provided by Citizens' witness, Dr. Dismukes. Dr. Dismukes provided testimony addressing two significant conceptual flaws in the \$2.024 million calculation of replacement power cost (RPC) proposed by FPL. First, he addressed the deficiency that FPL calculated its replacement power cost on an artificially shortened outage duration that does not fully capture the total cost imposed on ratepayers by the blackout. Second, he addressed the deficiency that FPL used an "adjusted system average cost" that effectively deflated the full refund amount due ratepayers. (Tr. 316). By correcting these deficiencies, he calculated a net replacement power cost of \$15,974,055 that reflects the true outage duration of the Turkey Point nuclear units and the actual fuel costs avoided by those units' outage. (Tr. 317). Despite the fact that FPL filed rebuttal to Dr. Dismukes' testimony by four separate witnesses, *none* of the filed rebuttal testimony disputed the calculation of \$15,974,055 as the actual replacement power cost which corrects the two deficiencies in FPL's calculation.

Dr. Dismukes utilized a two step process to correct the errors in the company's calculation of net replacement power cost. First, he corrected the artificial eight hour

limitation imposed by the company by calculating a peak (first eight hours) and nonpeak (remaining outage hours) replacement power cost. The peak period replacement power cost included both the additional purchased power costs and the additional replacement power costs above system average costs. The methodology was similar to that used by the company, except Dr. Dismukes used two months of data (February and March, 2008) rather than one. (Tr. 319). Net non-peak replacement power costs also utilized costs from February and March, 2008. Total net replacement costs above system average for the actual duration of the outage amount to \$6,384,707. (Tr. 320; Exhibit 17). However, none of these calculations account for the fact that two nuclear power plants went out of service on account of the incident. Turkey Point-specific costs are the appropriate avoided costs to utilize in developing a replacement cost estimate since the company was avoiding nuclear fuel costs, not adjusted system average costs, during the course of the outage. Making this adjustment yields a total net replacement cost estimate of \$15,974,055. (Tr. 321; exhibit 18). Again, the accuracy of this calculation was not disputed in any way by the four rebuttal testimonies filed by FPL.

One other estimate of the full replacement power cost came in response to a staff interrogatory which was served after all parties had filed direct and rebuttal testimony. In its response to staff interrogatory 42(d), FPL asserted that the replacement power cost for the full period of the outages (including the outages for Turkey Point Units 3 and 4) was \$14,557,000. FPL determined this amount by running a computer simulation which optimized the dispatch of its available generating units on an hour-by-hour basis. First, the company ran a base case which simulated the dispatch of the system as if the incident at the Flagami substation had not occurred.

Next, the company layered other scenarios, one of which included the outages which actually occurred at Turkey Point Units 3 and 4. The difference in fuel costs between those two scenarios amounted to \$14,557,000, according to the results of the simulation. The company also used a simulation for the ascension of power at the two nuclear generating stations, which is a level of detail which was not included in the other estimates provided by FPL in its filed testimony or in the calculation performed by Dr. Dismukes. (Tr. 124–127; 149).

On cross examination, Dr. Dismukes agreed that a dispatch model *can* be an appropriate approach. (Tr. 379). However, it is very difficult for other parties, including the Commission staff, to verify the accuracy of the model. Only FPL has access to the resources and software which would be necessary to replicate and confirm the accuracy of the model. *Id*; See also Exhibit 33, page 58.

The Commission has two calculations for the actual, full replacement power cost. On the one hand, it has \$15,974,055, provided by Dr. Dismukes in his direct testimony. The inputs to Dr. Dismukes' calculation were obtained from FPL's own numbers. His calculation was subject to full vetting, including discovery and the opportunity to respond by the company. Although FPL could have responded to this calculation in their four rebuttal testimonies, it did not. On the other hand, it has a figure of \$14,557,000, which was provided in response to a staff interrogatory well after all testimony had been filed and just minutes before the deposition of its sponsor, Mr. Yupp. Exhibit 33, page 45. Between the two, the Commission should choose the fully vetted number of \$15,974,055, which was subject to review and verification by all, and was not contested. The Commission should not accept the last minute "here's a number" approach which

FPL will likely advocate over the fully vetted, uncontested calculation provided by Dr. Dismukes. If anything, the computer simulation validates Dr. Dismukes' calculation by verifying that the power being replaced following the Flagami incident was the lost nuclear generation associated with the outages of Turkey Point Units 3 and 4.

The Commission Should Reject FPL's 8 Hour Scenario

Despite the fact that one nuclear power plant was out of service for 158 hours and another for 107 hours, FPL advocates that the Commission only look at the first 8 hours of the outage to determine replacement power costs. FPL claims that this time period reflects "the time period that the Flagami event affected the stability of FPL's system" (Tr. 453); the time after which a *majority* (but not all) of the gas fired plants had been brought back on-line (Tr. 454); and the time period when FPL had the *most* difficulty operating its generating system (Tr. 162). One thing is abundantly clear from FPL's liberal use of qualifying adjectives such as "majority" and "most": FPL's system was not fully back to normal operating conditions after 8 hours. Indeed, it was not actually back to normal until 158 hours had passed and both nuclear plants had returned to operation. FPL claims that after 8 hours its system was operating under the standard of "economic dispatch." That claim is patently untrue. Two large nuclear generators, which were operating at full power as cheap, base-loaded units at the time of the Flagami disturbance, were knocked off the system and were forcibly shut down at the time when FPL claims it could again operate its system on the basis of "economic dispatch."

The notion of only using an 8 hour period to calculate replacement power costs regardless of the actual length of the outage is a wholly new, late-arriving creation of FPL. When staff first asked FPL to provide an estimate of the net replacement power costs resulting from the Flagami outage, FPL advocated use of a 48 hour period because this was FPL's estimate of the amount of time it would take a single nuclear power plant to return to service in the absence of unrelated issues.¹ Exhibit 26, page 9. When asked later why the company was now advocating a different position, FPL responded that its first estimate was created at a time when it "had not yet evaluated the disincentives to the development of low fuel cost generating resources..." Exhibit 27, page 37. With this new evaluation, FPL discovered that customers should receive an even smaller refund than customers would receive using the first estimate.

A refund of only \$2 million based upon FPL's 8 hour position is unfair and inequitable, resulting in a refund of approximately one eighth of the full net replacement power cost calculated by Dr. Dismukes. (Tr. 346). It does not even attempt to try to equitably and fairly distribute the costs. (Tr. 380-381; 398). A refund for the full amount is necessary to make consumers whole. (Tr. 347).

The Commission Should Reject FPL's 48 Hour Scenario

As a back-up position, FPL calculated the replacement power cost for an outage lasting exactly 48 hours, with instantaneous full power at the plants (including both nuclear plants) at the 48 hour mark. To the dollar, the replacement power cost is \$6,491,507 if the outage at the nuclear plants is taken into account; it is \$3,507,899 if the outage at the nuclear plants is ignored. See (Tr. 444; exhibits 24 and 25). The

¹ For reasons developed below, FPL's use of a 48 hour period also shortchanges customers.

basis for this back-up calculation is the testimony of FPL witness Stall that "...typically it takes approximately 48 hours to bring a single unit back on line after an unexpected plant shut down." (Tr. 40).

Putting aside for the moment the question of why any time frame other than the actual one should be under consideration, utterly lacking from FPL's case is any evidence supporting FPL's 48 hour scenario other than Mr. Stall's rather unspecific opinion that it takes *approximately* 48 hours to bring a *single* unit back on line. Much more should have been provided in order to take this scenario seriously. For one thing, there is no evidence of the actual average time it has taken to restart Turkey Point Units 3 or 4 in the past, despite the fact that, in response to a question from Commissioner Skop, Mr. Stall stated that Unit 4 alone has been restarted a hundred or even hundreds of times. (Tr. 100-101). There is no evidence about average restart times for other nuclear units in FPL Group's fleet, nor is there any evidence about average restart times for any nuclear units operated by other companies. And there is no evidence of any studies, articles or trade literature addressing the issue of the average restart time for a nuclear power plant. All we have is an opinion of FPL witness Stall that it takes approximately two days. Such fuzzy evidence is simply inadequate to deny ratepayers full reimbursement for the actual outage.

However, even if the Commission were to take this generalized opinion at face value, the replacement power cost calculations provided by FPL for its 48 hour scenario do not match the other evidence provided by FPL concerning the outage. There are two reasons for this.

First, the 48 hour calculations provided by FPL assume that the plants instantaneously transformed from zero output to full output at exactly 48 hours. (Tr. 53). This does not reflect what actually happens when a plant is restarted. There is a power ascension period where the power is gradually raised, and this takes approximately 12 to 14 additional hours for the nuclear plants. None of the calculations provided by FPL for its 48 hour scenario take this into account. *Id.*; (Tr. 126).

Second, Mr. Stall testified that when two units are brought back on line after an unexpected shut down (as we have here), it typically takes three to five days to bring the units back on line – not two days. (Tr. 54). Among other things, the extra time is highly dependent on the resources available because there are only a fixed amount of resources, and these fixed resources have to be spread over two units instead of just one. *Id.* Where are the calculations and evidence by FPL for the replacement power cost reflecting the three to five day period? There are none. FPL simply ignored the testimony of its own witness and instead provided calculations about a 48 hour scenario which, according to its own witness, does not apply to the start up of two units.

These gaping deficiencies cannot be ignored by the Commission, and, therefore, the Commission should give no credence to FPL's 48 hour scenario.

There Should Be No Offset for the Repair of the Unit 3 Rod Position Indication System

FPL provided testimony stating that the outage of Unit 3 was extended in order to repair a Rod Position Indication system which had previously malfunctioned in October 2007. See, e.g., (Tr. 41-43). What FPL did not provide was any evidence, such as a critical path analysis, showing the length of time the outage may have been extended

on account of that repair. Since repairs to the Rod Position Indication system were being made at the same time that other restart functions were being accomplished, there is no way to know how much the outage was extended on account of the repair. FPL should have provided evidence of a Gantt Chart, a critical path analysis, or some other project time management tool which would provide the answer. FPL chose not to present this evidence and, therefore, cannot meet its burden of proof to show how long the outage was extended on account of this repair.

Even if FPL had provided this evidence, the extra time required to accomplish this repair still should not be charged against customers. FPL was required to make the repair to the Rod Position Indication system at the next planned or unplanned outage of Turkey Point Unit 3. (Tr. 78). But for the outage caused by the Flagami failure, the Rod Position Indication system would have been repaired during the next scheduled refueling outage. The only reason the repair was made during the Flagami outage is because an FPL engineer disabled two levels of protection at the Flagami substation. There was only one other minor outage – in June 2008 – before the next planned refueling outage, and there was no requirement to make the repair to the Rod Position Indication system during that minor June outage. (Tr. 79). At the next regularly scheduled refueling outage in March 2009, repair of the Rod Position Indication system would not have extended the outage because the repair could have been made while other work was being done. (Tr. 80, 95). Without the Flagami outage, FPL would not have been required to make the repair until it could have been done without extending any outage.

FPL claims that it would have made the repair during the June 2008 outage, even though it was not required to do so. (Tr. 79). FPL provided no documentation, no plans, and no other evidence relating to any such plans. During a deposition, Mr. Stall also claimed that he thought about making the repair in a shoulder month, but those thoughts were kept in his mind alone and not communicated to anyone else. Exhibit 34, page 27.

“Thinking” about making a repair is vastly different than “doing.” FPL resorts to speculation to resist making a refund based upon known facts. What we know for sure is that the repair had to be done in February and March 2008, because of the outage caused by the actions of an FPL engineer. We also know that no other event occurred before the next planned refueling outage that would have required the repair to be made earlier. And if it had been done during the refueling outage, it would not have lengthened the outage one iota.

Finally, it should be noted that the Rod Position Indication system was completely safe at all times even without the repair. In its license amendment request submitted to the Nuclear Regulatory Commission, FPL assured the NRC that the alternative system put in place by FPL to monitor the rod position did not adversely affect the safety of the plant. See exhibit 31, bates stamp pages 366-367. The NRC would not have approved deferral until the next outage if it had.

There Should Be No Offset for the Additional Outage Time Caused by the High Water Level in a Unit 4 Steam Generator

Abnormally fast generator loading, inadequate guidance provided by FPL procedures, failures in communication among operators, and an inadequate

understanding of the “shrink and swell” concept by FPL operators led to a manual trip of Unit 4 during power ascension. This mishap lengthened the outage of Unit 4 by approximately 30 hours and lengthened the outage of Unit 3 by an unknown amount. Exhibit 31, bates stamp page 413. Customers should not be responsible for the fuel costs associated with this additional outage time.

First, as is true with so much of its case, FPL provided no quantification of the replacement fuel cost attributable to this additional outage time. Indeed, it is not clear exactly how much additional outage time is attributable to this mishap, although there is no doubt it is significant for one nuclear reactor, and perhaps both. According to the six team members who prepared a root cause analysis of the event, the manual trip occasioned by an excessively high steam generator level “challenged plant systems and caused financial consequences by adding an unplanned unit cycle and delaying startup on both Turkey Point nuclear units by approximately 30 hours.” Exhibit 31, bates stamp page 412 (underlining added). Mr. Stall, who hadn’t even seen the report by the six members of the team until he was preparing for this PSC case (Tr. 61), claimed at the hearing the team’s conclusion that it affected both units was “speculative” and that he did not agree with it. (Tr. 60).

At a deposition prior to the hearing, however, he agreed that the manual trip of Unit 4 had an impact on the total outage time for Unit 3. He just couldn’t attribute a discrete number of hours to the impact on Unit 4. Exhibit 34, page 14. The team members with whom Mr. Stall disagreed included an FPL engineering supervisor, an FPL operations department unit supervisor, an FPL training supervisor, and an FPL principal engineer, among others. Exhibit 31, bates stamp page 410. The team used

FPL's Root Cause Handbook as a guide utilizing Event and Causal Factor charting, Why Analysis techniques and Barrier Analysis. They also used a root and contributing cause test matrix to validate root and contributing causes. Exhibit 31, bates stamp page 420. The conclusion of the team should not be discarded so easily.

Second, the root cause analysis clearly shows that inadequate FPL procedures and FPL operator errors caused this additional outage time. The report's overarching conclusion, provided in bold letters in the report, states that "insufficient guidance for the initial loading of the main generator and for stabilizing power while preparing to transfer to automatic feed regulating valve control is the root cause." Exhibit 31, bates stamp page 413. The "insufficient guidance" came from a procedure used for the evolution; Mr. Stall confirmed that the cited procedure was an FPL-created document. (Tr. 62). Operator errors included (1) the turbine operator and the senior reactor operator continued to increase the main generator load while steam generators were unstable, (2) the operating crew did not load the main generator at the same rate as practiced in just-in-time-training, and (3) the operating crew did not stop or slow down when unsure. Exhibit 31, bates stamp page 420. The operators loaded the generators "abnormally" fast. Exhibit 31, bates stamp page 413. Some operators displayed a "fundamental" knowledge gap regarding shrink and swell phenomena, and even Mr. Stall agreed with that. Exhibit 31, page 426; (Tr. 73-74). It is hard to conceive how FPL believes that its customers, rather than FPL, should be accountable for the costs of the additional outage time under these circumstances.

FPL claims that it shouldn't be held to a standard of "perfection." (Tr. 74, 435). Holding FPL to a standard of providing adequate (not perfect) guidance to its operators,

or that operators slow down when unsure and that they not load generators at “abnormal” speed, or that they not display “fundamental” knowledge gaps about pertinent phenomena, is not a standard of “perfection.” FPL should have provided adequate guidance to its operators, and the operators should have proceeded reasonably when unsure. They did not.

Similarly, FPL points to the overall historical operation of the Turkey Point nuclear units to support its position. The Commission should reject this argument. The subject of this case is the replacement costs attributable to the Flagami failure and the measurement of those costs. To address this issue, the Commission must examine the facts and circumstances specific to the blackout. What the utility may have done or accomplished in other areas – whether good or bad -- is irrelevant. FERC, for example, has held that exemplary performance in other areas would not excuse a utility’s imprudent performance in an area under consideration. According to FERC, “FERC is not a parole board granting time off for good behavior.”² In the same vein, the average performance of the nuclear plants in 2008 is not at issue in this proceeding and has nothing to do with the correct measurement of replacement power costs for this outage.

The Commission should reject FPL’s proposal to substitute system average costs for the lower cost of nuclear fuel that the Flagami failure actually denied to customers.

As mentioned above, in addition to the severely truncated time frame to which FPL wants to limit the analysis of replacement costs, FPL’s witness proposed

² *Re Gulf States Utilities Company*, Texas Public Utility Commission Docket No. 10894, 1993 WL 655241 (1993); *Re Gulf States Utilities Company*, Louisiana Public Service Commission Docket No. U-20647: 154 P.U..R. 4th 38 (1994), affirmed in relevant part in *Gulf States Utilities v. Louisiana Public Service Commission* 689 So. 2d 1337 (Louisiana Supreme Court, 1997), citing *Kansas Gas & Electric Co.*, 39 F.E.R.C. ¶ 63,013 at 65,062-65,064 (F.E.R.C. April 24, 1987).

measuring the incremental costs of the Flagami incident by comparing the actual costs incurred during the outages of Turkey Point Units 3 and 4 to—not the low fuel costs of 0.44 cents/kWh associated with their lost generation—but to system average fuel costs of 5.13 cents/kWh. FPL chose the proxy of system average fuel costs consciously and explicitly to lower the calculated refund relative to the refund that would result from using the costs of nuclear fuel in the equation. Significantly, like the choice of the eight hour study period, the use of system average fuel costs contradicts the methodology that FPL employed to answer Staff interrogatories on the subject of replacement fuel costs long after the Flagami incident. In October 2008—some seven months after the Flagami episode—FPL measured the replacement fuel costs by comparing the actual fuel costs it incurred during the Flagami-caused outage with the low cost of nuclear fuel that would have been consumed had the incident not occurred. Subsequently, after FPL revised its methodology to employ system average fuel costs and thus lower the calculated replacement power costs, Staff asked, in another interrogatory, why FPL had changed its calculation. In its answer, FPL said:

At the time it prepared the response to Interrogatory No.70 in Docket No. 080001-EI, FPL had not yet evaluated the disincentives to the development of low fuel cost generating resources such as nuclear, solar and wind power that would result from basing the replacement power costs (“RPC”) for a transmission-created outage on the fuel costs and operational characteristics of a nuclear unit that had been prudently operated but nonetheless came offline as a result of such an outage.

Exhibit 27, page 37.

In other words, seven months after the Flagami incident, the “defense” of purported disincentives had not occurred to FPL. When it did, FPL contrived the proxy of “system average costs” and the distinction between transmission costs and

generation costs to lower the amount of the refund. The belated nature of FPL's change to "system average cost" is reason enough to render it suspect. An analysis of the merits of the measure confirms it should be rejected.

The rationale that FPL advances in support of its switch to system average costs and the resulting much lower refund, principally through the testimony of Dr. Avera, contains three propositions. The first proposition is that investors possess a jaundiced view of what they regard as an "asymmetric" fuel cost recovery clause that forbids profits on fuel expense but provides for the possibility of disallowances of excessive fuel expenses. The second component is that basing a refund of the replacement power costs attributable to the Flagami transmission event on the difference between the replacement power costs and the low fuel costs of the lost nuclear generation from the Turkey Point nuclear units would introduce a new investment risk—one in which these already seemingly disgruntled investors previously were not aware, and one that therefore would increase FPL's cost of capital. The third is that calculating a refund by comparing the cost of replacement power with the low cost of nuclear generation that was actually lost and had to be replaced would create a disincentive to invest in nuclear and renewable forms of generation, and therefore, it is desirable policy to dilute the impact of lost nuclear generation on refund calculations by substituting the artificially higher proxy of system average fuel costs for nuclear fuel costs in the comparison.

Each of these assertions is flawed, and like a stool with three broken legs, FPL's construct falls of its own weight. By any objective assessment, the current fuel cost recovery mechanism is a boon to FPL and its investors, not a drawback. Further, Dr. Avera's effort to exempt the lost nuclear generation from the impact of FPL's Flagami

mishap by claiming “investor surprise” is simply untenable. Investors are fully aware that the Commission has authority to review *all* of FPL’s costs, and protect customers from expenses that are excessive, without limitation. To link the Flagami failure to the costs of replacing lost nuclear generation is to do no more than recognize cause and effect. The only new or novel element in FPL’s argument is its effort to create a nuclear/renewable carve-out to the Commission’s fundamental role of insulating customers from the costly consequences of the utility’s errors.

Finally, Dr. Avera has his “incentives” all wrong. The appropriate message for regulators to impart to utilities that fail to control costs is not that they can incur excessive costs with impunity, but that they need to take the steps needed to avoid the mistakes that lead to excessive costs, and that it is the job of regulation to exclude those excessive costs from rates and/or cost recovery factors.

The fuel cost recovery clause is a subpart of the general principle of economic regulation that provides a utility holding a monopoly may not “mark up” operating expenses and may recover only reasonable expenses from customers.

Dr. Avera characterized these features of the fuel cost recovery clause as “asymmetric,” and suggested that investors view the cost recovery mechanism negatively. (Tr. 180) When one places his comments in larger context, a very different picture emerges. The fuel cost recovery mechanism is a subpart of the Commission’s larger ratemaking exercise. As Dr. Avera agreed (Tr. 190-191), the general equation that quantifies the monies a utility may collect from customers is this:

REVENUES = REASONABLE EXPENSES PLUS FAIR RETURN ON INVESTMENT

In short, public utilities under regulation collect only *reasonable* expenses from customers. Said differently, regulation exists to ensure that utilities do *not* collect *unreasonable* expenses from customers. (Tr. 190) As to Dr. Avera's point that FPL does not make a profit on fuel, that, too, is merely the fuel cost recovery subpart of the same larger picture, in which the opportunity for a utility to "profit" is through an authorized return that is applied to its prudently invested capital.

The derivation of a fuel cost recovery factor that includes no "profit" is analogous, in this respect, to operating expenses that are built into base rates. When FPL identifies fuel costs, it includes no profit on its expenditure. When building a representative test year for purposes of setting base rates, FPL similarly identifies and includes actual costs of copier paper, gasoline burned in trucks, wages, etc.—all without profit or markup. When the Commission assesses the fuel costs presented by FPL, it screens out unreasonable and excessive costs from the calculation of the fuel cost recovery factor, and in this way ensures that shareholders, not customers, bear excessive costs. When in a base rate case the Commission analyzes test year data, it removes unreasonable and excessive expenses from the calculation of revenues to be collected through base rates, so that shareholders, not customers, absorb the excessive costs. Dr. Avera acknowledged the similarities (Tr. 195)³.

Moreover, the negative sentiments regarding Florida's fuel cost recovery mechanism that Dr. Avera attempted to ascribe to investors simply do not comport with

³ Dr. Avera countered that a utility can attempt to make a profit on expenses embedded in base rates, but acknowledged in response to cross-examination that he was referring to the possibility that the costs the utility experiences following the base rate case may differ from those upon which the design of the rates was based. He agreed that no profit on expenses is incorporated at the time the rates are designed. (Tr. 192-195) Of course, once base rates are set expenses may increase, such that the utility experiences a loss rather than a profit. This does not happen to costs collected through the fuel cost recovery clause, which incorporates a true-up feature to ensure recovery of prudent and reasonable fuel costs.

the facts. Savvy investors who examine the fuel cost recovery clause understand that the \$15.9 million refund sought by OPC in this case amounts to about ¼ of one percent of the \$6.1 billion that FPL collected from customers through the fuel cost recovery clause in 2008 (Exhibit 36, at page 6 of Form 10-K). When viewed from this perspective, Dr. Avera's predictions of dire investor reactions turn very, very pale.

Investors also like the fact that the Commission authorizes electric utilities to recover fuel expenses on a current basis—that is to say, FPL collects its fuel costs in the same time frame in which it is incurring those costs. (Tr. 210). This practice differs from jurisdictions in which there is a lag between the time the utilities incur fuel costs and the time at which they are permitted to recover those costs.⁴ (Tr. 209). Investors also find attractive the true-up feature of the fuel cost recovery mechanism, which ensures that the utility's effort to collect all of its fuel costs will not be thwarted by a difference between projected and actual usage by customers. The true-up feature, which also adds interest to any shortfall, reduces virtually to *zero* the risk that a utility will not recover 100% of its reasonable and prudently incurred fuel costs. In short, the fuel cost recovery clause enables FPL to collect 100% of reasonable fuel costs, topped off when necessary by a true-up with interest added. Dr. Avera's effort to portray the fuel cost recovery mechanism as a “glass half empty” from an investor's perspective simply is not credible.

⁴ OPC's witness, Dr. Dismukes, cited a report by the National Regulatory Research Institute (NRRI) in which the NRRI observed that jurisdictions that employ historical costs and incorporate a lag between the time fuel costs are incurred and the time they are collected from customers believe the lag imposes a form of discipline on the utilities and creates the incentive to manage fuel costs more carefully. (Tr. 331).

Contrary to Dr. Avera's assertion, investors are aware that the Commission's authority and responsibility to insulate customers from the consequences of management's mistakes extends to and includes all of the utility's costs.

Dr. Avera testified that investors understand that a utility may expect disallowances of fuel costs if management fails to operate its nuclear units prudently, but asserted that investors will be surprised if adjustments related to a nuclear outage are made when there is no claim that the nuclear units themselves were operated imprudently. The record disproves his assertion.

First, contrary to Dr. Avera's claim, this case is not the first in which regulators have dealt with the replacement costs of lost nuclear generation that were occasioned by a "transmission event." In the early 1990s, an outage of the River Bend nuclear unit of Gulf States Utilities was extended when a transformer used to deliver power generated off-site to the nuclear plant exploded. The regulatory agencies of Texas and Louisiana held the utility's management responsible for the transformer failure and adjusted the amount of replacement power costs it was authorized to recover from customers. See *Re Gulf States Utilities Company*, Texas Public Utility Commission Docket No. 10894, 1993 WL 655241 (1993); *Re Gulf States Utilities Company*, Louisiana Public Service Commission Docket No. U-20647: 154 P.U..R. 4th 38 (1994), affirmed in relevant part in *Gulf States Utilities v. Louisiana Public Service Commission* 689 So. 2d 1337 (Louisiana Supreme Court, 1997).

The orders are important to this case for two reasons. First, in those orders the regulators recognized the "cause and effect" relationship between the *transmission event* for which management was responsible and the *higher fuel costs* of the nuclear outage, and, based upon the lost nuclear generation, adjusted the fuel costs that the

utility was authorized to collect from customers.⁵ Secondly, *Dr. Avera was a paid consultant in that matter.* (Tr. 255). Dr. Avera, therefore, was personally aware in the early 1990s that regulators in two states had held a utility responsible for the costs of lost nuclear generation when a utility-created transmission problem had the effect of extending a nuclear outage. During the hearing, Dr. Avera testified the River Bend transformer was dedicated to the nuclear unit, as compared with the Flagami substation that was part of the “bulk electric” system. (Tr. 277-278). This was a feeble effort to distinguish the “transmission event” of two Gulf States cases from the facts of this case.

The function of the River Bend transformer was (1) to receive power that had been generated by facilities distant from the nuclear plant and had been *transmitted* across Gulf States’ transmission system to the transformer; (2) to step down the voltage at which the power had traveled *via transmission line* to the transformer; and (3) to deliver the stepped-down power to loads within the site while the nuclear generator was shut down. The transformer exploded, with the result that the distantly generated power could not be transmitted to the loads. The explosion of the transformer was as much of a “*transmission event*,” to use Dr. Avera’s term, as was the Flagami episode—and the reference to a “dedicated” transformer constitutes a distinction without a difference. That the transformer was not part of the utility’s “bulk electric system” does not alter the fact that a management-caused failure of a transmission-related asset, rather than imprudent operation of the nuclear unit itself, was twice deemed the cause of a portion

⁵ The Louisiana agency disallowed half the amount of replacement costs sponsored by the witness who advocated the adjustment. However, the apportionment was based, not on any policy considerations favoring a “sharing” between utility and customers, but rather on a finding that the record was ambiguous with respect to the amount of delay that could have been avoided by proper planning with respect to the transformer that failed. Order No. U-20647, at pages 26, 28.

of the outage and the basis for a disallowance of a related portion of the replacement costs associated with the outage.

In the River Bend situation in which Dr. Avera was involved, the management-caused transmission event merely contributed to the duration of an existing outage of the nuclear plant, whereas in this case the Flagami substation calamity solely, wholly, and conspicuously caused Turkey Point Units 3 and 4 to shut down. As the loss of Turkey Point Units 3 and 4 was attributable solely to the Flagami failure, the full cost of replacing the energy that the nuclear units were unavailable to generate must be included in the calculation of the refund.

The Texas and Louisiana orders demonstrate that, contrary to Dr. Avera's assertion, the investment community will perceive nothing new in the recognition that transmission-related mistakes can affect nuclear operations, and can serve as the basis for adjustments to the replacement power costs collected from customers. Even more important to this case is the fact that—thanks in part to the manner in which provisions of law require FPL to broadcast its risks to investors and the world at large—investors are fully aware that the Commission's authority to protect customers from excessive costs is not limited by the distinction that Dr. Avera advances in his testimony.

In Exhibits 36, 37, and 38, OPC pointed to several of the many communications between FPL and investors (as well as the public) on the subject of the risks that it faces. Exhibit 36 is an excerpt from FPL Group, Inc.'s 2008 annual report to shareholders. Within the report appears the full text of FPL Group's 2008 Form 10K, and the report refers the reader to the "risk factors" described in Form 10K. The Form

10K includes a “Business” section in which the operations of FPL are described. At page 6 appears this cautionary note:

The FPSC has the authority to disallow recovery of costs that it considers excessive or imprudently incurred. Such costs may include, among others, fuel and O&M expenses, the cost of replacing power lost when fossil and nuclear units are unavailable, storm restoration costs and costs associated with the construction or acquisition of new facilities.

In this case, FPL asserts through Dr. Avera that investors would be surprised if the Commission were to exclude from customer bills replacement power costs occasioned, not by the imprudent operation of Turkey Point Units 3 and 4, but by a “transmission event” that caused the units to shut down. That neat distinction is absent in the risk that FPL’s corporate parent described to investors in the quoted statement. It says simply that the Commission may prohibit recovery of excessive or imprudently incurred costs of replacing power lost when fossil and nuclear units are *unavailable*, without tethering the risk to imprudent operation of those units. Clearly, the risk that FPL described here encompasses situation in which the nuclear units have been rendered unavailable by factors unrelated to the manner in which the units themselves were being operated, and investors have incorporated that risk in their assessment of FPL.

More cautionary notes appear in Item 1A, “Risk Factors.” At page 19, FPL Group, Inc. informed investors:

FPL Group and FPL are subject to complex laws and regulations, and to changes in laws or regulations, with respect to, among other things, allowed rates of return, industry and rate structure, operation of nuclear power facilities, construction and operation of generation facilities, construction and operation of transmission and distribution facilities, acquisition, disposal, depreciation and amortization of assets and facilities, recovery of fuel and purchased power costs, decommissioning costs, ROE and equity ratio limits, transmission reliability and present or prospective

wholesale and retail competition. This substantial and complex framework exposes FPL Group and FPL to increased compliance costs and potentially significant monetary penalties for non-compliance. *The FPSC has the authority to disallow recovery by FPL of any and all costs that it considers excessive or imprudently incurred.*

(emphasis provided)

OPC submits no prudent investor could fail to understand the comprehensive nature of the Commission's responsibility—or the risk that that responsibility presents to investors when management errs and incurs excessive costs as a result.

Page 19 contains another cautionary note that is relevant to this point. It states, in pertinent part:

The operation and maintenance of power generation, transmission and distribution facilities involve significant risks that could adversely affect the results of operations and financial condition of FPL group and FPL.

The operation and maintenance of power generation, transmission and distribution facilities involve many risks, including, for example, start up risks, breakdown or failure of equipment, transmission and distribution lines or pipelines, the inability to properly manage or mitigate known equipment defects throughout FPL Group's and FPL's generation fleets and transmission and distribution systems, use of new or unproven technology, the dependence on a specific fuel source, failures in the supply or transportation of fuel, the impact of unusual or adverse weather conditions, . . . and performance below expected or contracted levels of output or efficiency. This could result in lost revenues and/or increased expenses, including, for example, lost revenues due to prolonged outages and increased expenses due to monetary penalties or fines, replacement equipment costs or an obligation to purchase or generate replacement power at potentially higher prices to meet contractual obligations.

Note that, unlike FPL's effort in this case to segregate "transmission events" and generation costs, in its Annual Report FPL grouped power generation, transmission and distribution facilities together for the purpose of communicating the risks of higher expenses to investors. While the final example of replacement power in the material quoted here assumes a merchant context involving contracts, it is instructive. In an

unregulated environment, if an unexpected nuclear outage leads to the inability to deliver power at contracted prices, the seller, and not the buyer would absorb the extra costs. By analogy, where customers of a monopoly enterprise are protected by regulators instead of contractual commitments, the result should be the same. In each case, the risk of higher costs flowing from management errors belongs to the merchant or the utility, respectively, and not to its customers.⁶

The refund calculation that Dr. Avera endorses is inconsistent with the premises of his testimony.

Dr. Avera asserts that the Commission should limit the refund to costs of the “transmission event,” and criticizes OPC’s witness for failing to distinguish between the “transmission costs” and the separate “generation costs.” (Tr. 482). He endorses the refund calculation sponsored by FPL witness Mr. Yupp. However, as Dr. Avera acknowledged during cross-examination, Mr. Yupp’s refund calculation consists of *heat rate* values applied to *fuel cost* data.

As the Commission is aware, and as Dr. Avera agreed, a “heat rate” is a measurement of the efficiency with which a generator converts heat energy into electricity. (Tr. 482-483). Transmission lines do not have heat rates, generators do. Similarly, the fuel costs that Mr. Yupp employed, and that Dr. Avera endorsed, relate to fuel burned in generators, not transmission lines. (Tr. 483). Dr. Avera agreed that transmission events can have generation impacts. (Tr. 482). The costs of the

⁶ The disclosure of these risks is not limited to the annual report. OPC introduced examples of FPL press releases and information pertaining to a conference call with financial analysts that contained language similar to that quoted above. The press release was issued in 2007, well prior to the Flagami incident. See Exhibits 37 and 38.

transmission event are the higher generation costs occasioned by the impact of the Flagami failure on FPL's generation fleet.

In support of its proposal to use system average costs in lieu of the lower cost of nuclear fuel in the refund calculation, FPL asserts that after eight hours the impact of the Flagami failure on FPL's ability to operate its generators was over. Dr. Avera put it this way: "Because during that eight-hour period, as Mr. Yupp testified, there was not the availability of the normal economic dispatch of generators." (Tr. 483). Dr. Avera omitted to say that, at the end of eight hours, two nuclear units, which had been generating some of the most economical power available to the system and operating at full power at the time of the Flagami event, were still shut down.

In his testimony, Dr. Avera is not really trying to segregate "transmission event costs" from "generation costs." He is simply trying to exempt the lowest cost generation that Flagami knocked off the system from the refund equation. This effort depends on the legitimacy of the proposition that after eight hours the system was back to "normal." However, the idea that after eight hours the system had returned to normal and was operating under economic dispatch when two nuclear units were still shut down and unavailable is ridiculous on its face. As was the case in a very different context, FPL's eight-hour claim of "Mission Accomplished" is extremely premature.

A similar point is seen in Dr. Avera's observation that there is no claim that FPL was operating the nuclear units imprudently when they shut down in response to the Flagami failure. Dr. Avera invokes this fact to support his contention that the lost nuclear generation should not be incorporated into the refund calculation. (Tr. 181-182). However, Turkey Point Units 3 and 4 accounted for only about 1,434 MW of the

4,300 MW of generating capacity that were knocked off the system by the Flagami failure. Further, the heat rates and fuel costs of specific FPL units are incorporated into the Yupp calculations that Dr. Avera endorses. *There are no claims that any of those generating units were being operated imprudently.* (Tr. 484). Taken to its absurd logical conclusion, Dr. Avera’s attempted distinction would result in a finding that no refund is warranted by the “transmission event,” because all generators were being operated prudently at the time they were shut down.

The only differences between the loss of the Turkey Point nuclear units and the others that were affected by Flagami are the duration of the outages and the differential between the cost of the lost generation and the cost of replacement power: factors that cause the refund to be higher when they are recognized and incorporated into the refund calculation. Claims that the nuclear units should be culled from the refund calculation on the basis that they are generation costs and not transmission costs—or because they were not being operated imprudently at the time they shut down—fail to distinguish between the nuclear units and those that FPL includes in its calculation, and must be seen for what they are: disingenuous and unpersuasive efforts to require customers to shoulder the risks and costs of management’s mistakes.

Incorporating the full differential between nuclear fuel costs and replacement costs into the refund calculation is neither unfair nor a disincentive to invest. Nuclear generators are characterized by far lower fuel costs than other technologies, and capital costs that are far higher than alternative technologies. In addition, the Commission takes the risk of nuclear operations into account when it sets FPL’s return on investment. This means the lower fuel costs of nuclear generation are accompanied by relatively higher earnings that result from applying a risk-adjusted authorized return to a higher capital investment.

When one contemplates the tremendous advantage of operating a business that has no competitors, and the potential for excesses that the lack of competition would create, the role of disallowing imprudent or excessive costs that Dr. Avera described as a downside is more properly seen as a necessary protection and curb against the potential for monopoly abuse, inefficiency, and any and all other factors that, in the absence of the discipline of competition, could lead to excessive costs to customers. In fact, Dr. Avera agreed that what he characterized as the “risk of disallowances” is essentially the risk that management may fail to manage its costs and the regulators may do their jobs. (Tr. 208). Yet, while he agreed with the premise that the function of regulation is to protect customers from high costs emanating from management’s missteps, he nonetheless contended that regulators who have determined imprudent and excessive costs should worry about “perverse incentives” and “unintended consequences” that might result if they exercise their authority to exclude excessive costs from those borne by customers. (Tr. 201). In this, Dr. Avera is wrong.

Again, one must look at the larger picture. In Florida, bear in mind that investor-owned electric utilities are given a monopoly to provide an essential service to 100% of retail customers. In return for that privilege, they are required to operate efficiently in the customers’ interests and are subjected to the scrutiny by regulators that is intended to protect customers from excessive costs. When Dr. Avera tells the Commission that a disallowance of even indisputably excessive costs may affect the utility’s behavior in ways the regulators will not like, he is predicting that the utility will accept the 100% market share and all of the other advantages associated with being a monopoly, but will no longer “behave” well (i.e., make decisions based upon the criterion of serving the

customers' best interests) if the regulators refuse to permit it to flow the extra costs of its mistakes through to customers' bills. In other words, Dr. Avera cautions the Commission that a regulated utility can accept the advantages of being a monopoly, but may elect not to serve ratepayers' interests if the regulatory quid pro quo is invoked to shield customers from excessive costs.

As a matter of fundamental policy, the Commission must reject this notion. In addition to failing to perform its statutory responsibility of protecting customers from unreasonably high bills, the message that a regulatory commission would send regulated utilities through the type of amnesty or appeasement that Dr. Avera appears to advocate is that mismanagement will have no consequences, because the customer base will serve as a receiving "sink" for costs resulting from management missteps. This is where the witness has his incentives wrong.

If the Commission were to relax its guard against excessive costs, this would invite the kind of moral hazard described by OPC witness Dr. David Dismukes. (Tr. 326-328). The term "moral hazard" describes the conduct of those who are given reason to believe that they will not be required to bear the consequences of poor decisions. While Dr. Avera denied that the concept of moral hazard is applicable to this situation (Tr. 470), the remarkable regulatory "pass" that he and other FPL witnesses seek from the Commission for the consequences of the Flagami substation episode *and future circumstances involving nuclear and renewable investments*⁷ amounts to a

⁷ In this case, FPL has attempted to claim that a decision to require FPL to measure the refund by reference to the low costs of nuclear fuel would discourage it from investing in nuclear and renewable technologies. OPC calls on the Commission to reject the claim in its entirety. One should observe, though, that FPL offered no evidence to demonstrate that there is any analogy to be made between this case and "renewables." That is, there is no indication that "renewables" would share either the low operating costs or the lengthy recovery time frames that are associated with the unplanned outages of the Turkey Point nuclear units in this case. Further, FPL links its request for dispensation to an exemption for

request to establish such an environment of privilege and immunity—at customers' expense. The correct signal to send to utility management in this and similar cases is that the Commission will protect customers from the consequences of management's mistakes, hence, management should improve the performance that resulted in the costs it must absorb.

Here, the \$25 million fine imposed by FERC and NERC for alleged violations of reliability standards and protocols (which fine FPL accepted without protesting or invoking possible negative investor sentiment), coupled with a demonstration in this case of the Commission's resolve to protect customers from absorbing the consequences of management's missteps, should create a positive incentive to better manage the vulnerable interface between FPL's substation repair activities and its system of transmission and generation assets. Therefore, in the future such incidents will not interfere with FPL's ability to realize the opportunity the Commission affords it to earn a fair return on its investment in plant, including its nuclear units.

For the Commission to perform its statutory function of filtering excessive costs from those that customers must bear would create no disincentive to invest. With respect to Turkey Point Units 3 and 4, FPL is rewarded financially through the appropriate return that the Commission authorizes FPL to earn on its capital investment in nuclear facilities. The greater dollar investment per kilowatt that nuclear facilities require presents a utility with the opportunity to increase its earnings relative to less

generators that have relatively low fuel costs and high capital costs. FPL presents a slippery slope. Where would one draw the line? For instance, coal units have low fuel costs and high capital costs relative to some other generators, and coal units' start-up time frames are longer than some others. Would FPL have attempted to invoke the fictional "system average cost" argument for its coal units if they had been shut down by the Flagami transmission disturbance? For these reasons as well as those argued in this brief, the appropriate policy is to recognize cause and effect, and measure replacement costs on actual time frames as well as costs actually incurred and actually avoided.

expensive, non-nuclear alternatives—and, notwithstanding claims of indifference by its consultant, based upon its representations to investors, FPL clearly wants to increase its earnings.

Dr. Avera testified that the refund proposed by OPC would be unfair because of the magnitude of the differential between the low fuel costs of nuclear generation and the high replacement costs that FPL incurred when Flagami caused the nuclear units to be unavailable. However, there is a corresponding differential between the capital costs per installed kilowatt that a utility must invest to construct a nuclear generator rather than a less expensive alternative. Dr. Avera agreed, for example, that if one generation technology costs \$2,500 per kW and an alternative costs \$1,000 per kW, an investment in the \$2,500/kW generator would produce 2.5X the amount of “return dollars” than the less capital-intensive alternative. (Tr. 216).

Dr. Avera contended that, despite the disparity in earnings associated with the choices, the utility would be indifferent to the choice of generation technologies (Tr. 216). His assertion is contradicted by two factors. First, regulators take the risk of nuclear operations into account when quantifying the rate of return that is appropriate for a utility. (The Commission implicitly recognized this in the recent order in FPL’s rate case, docket No. 080677-EI. See Order No. PSC-10-0153-FOF-EI, at page 131.) The higher rate of return authorized for a utility that has nuclear operations compensates for the increased risks of owning and operating nuclear units (such as the magnitude of the differential between the cost of nuclear fuel and the cost of replacement power) and means the utility is not indifferent with respect to its investment choices.

Further, FPL informs investors that restrictions on earnings growth constitute one of the chief risks of being a regulated company:

The regulatory process generally restricts FPL's ability to grow earnings and does not provide any assurance as to achievement of earnings levels.

Exhibit 36, at page 19 of Form 10K. (emphasis provided)

Clearly, and not surprisingly, this warning does not emanate from an entity that is dispassionate and indifferent as to its earnings levels. Just as the nuclear operations present risks, including those communicated by FPL to its investors (see above), those risks are translated into potential rewards in the form of a higher rate of return and potentially higher earnings.

CONCLUSION

The Commission should order FPL to refund \$15.9 million plus interest to its retail customers.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of Citizens' Brief has been furnished by electronically and by U.S. Mail on this 19th day of April, 2010, to the following persons:

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