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December 18, 2014

Ms. Carlotta S. Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard, Room 110
Tallahassee, FL 32399-0850

Re: Docket No. 140000-EI

Dear Ms. Stauffer:

Pursuant to Order No. PSC-13-0387-DS-EI entered in Docket No. 130160-EI, Florida Power & Light Company (“FPL” or the “Company”) submits this report summarizing the results of the study described in that docket, along with its current plan for the future use of the predictive tool developed through the Company’s analysis.

In brief, the results of this study demonstrate the benefit of smart grid technology as a predictive tool to proactively identify a problem within the customer’s meter enclosure at an early stage, often before the customer experiences a power quality problem. This tool will enable FPL to provide customers with information about their electrical system so they may take actions to prevent potential service problems or additional damage to the customer-owned equipment.

Background

On June 6, 2013, FPL filed a Petition for a Declaratory Statement related to a planned project to use encrypted smart meter data to further validate and refine a predictive data model (the “tool” or “predictive tool”) to identify probable future meter enclosure problems. In that Petition, FPL explained that an evaluation of a small number of meter enclosures housing smart meters that were displaying a specific communications pattern revealed that approximately 70% of those meters were found to be housed in customer-owned meter enclosures that required repairs to be in proper operating condition. As a result, FPL hypothesized that the encrypted smart meter data might serve as the basis to develop a useful tool that could help to identify potential problems within the customer’s meter enclosure before those conditions caused further damage to the customer’s enclosure and potentially to surrounding property which could cause power quality conditions and probable damage to the meter itself.

Because the initial evaluation involved a small number of meter enclosures and meters, FPL proposed in its Petition to study a statistically valid random sample of approximately 400 deployed smart meters displaying the data patterns that FPL believed were indicative of problems within the customer-owned meter enclosure. Through this study, FPL hoped to validate and potentially increase the predictive capabilities of the tool.

On August 20, 2013, the Commission granted FPL’s Petition for Declaratory Statement. In that Order, the Commission ruled that when the project was completed, FPL would provide the Commission with a written report with the results of the study, along with a plan for the future use of the predictive tool. FPL initially anticipated completing its fieldwork by the first quarter of 2014. However, customer responses to requests to participate in the study were lower than expected. As a result, FPL subsequently notified Commission Staff that it anticipated completing field work by the end of the 3rd quarter of 2014, with the required report to be provided during the 4th quarter of 2014.

Study Results

In order to study a statistically valid sample size to validate and further refine the predictive capabilities of the tool described above, FPL obtained approval from 403 randomly selected customers whose meters were displaying the communication data patterns consistent with problems within the customer-owned meter enclosure. Following customer approval, the Company inspected, studied, and where necessary, repaired or replaced the customer-owned meter enclosures at no cost to the customer¹. The data and analyses related to this group of 403 meter enclosures – which ultimately confirmed that the smart meter communications patterns were occurring due to conditions within the meter enclosures and not due to any problems with the smart meters themselves - forms the basis of the current plan to utilize the tool developed through this project.

Of the 403 customer-owned enclosures identified by the predictive tool and inspected by FPL, 314 enclosures, or 78 percent (as opposed to the 70% identified in the initial analysis that led to this study), were found to have some level of damage or degradation that required repair.

Metric	#
Participants	403
Completed inspections	403
Damaged enclosures identified	314
Actual Damage Rate	78%
Anticipated Damage Rate	70%

Of those meter enclosures requiring repairs, 54 percent (169) required minor work consisting primarily of repairs to blocks and jaws within the enclosure. The remaining 46 percent (145) required major repairs to multiple components within the enclosure or, in a few cases, complete replacement of the enclosure. FPL also noted that in nearly 60% of all cases where FPL determined that there was a need for meter enclosure repairs, local permitting authorities required the customers to perform

¹ FPL contacted 2,333 customers to reach the target of 403 voluntary participants in the study

additional work to bring the customer’s electrical system up to current electrical codes. The most prevalent condition that the customer was required by local permitting authorities to rectify (aside from the meter enclosure repairs that FPL completed) related to updates to grounding at the customer’s premise.

# of Components	Count	Percent of Total
Minor Repairs		
1	53	17%
2	69	22%
3	47	15%
Total Minor	169	54%
Major Repairs		
4	36	11%
5	28	9%
6	19	6%
7	17	5%
8	17	5%
9	15	5%
10	13	4%
Total Major	145	46%
Total	314	100%

Based upon the results of this study, FPL believes that the use of this predictive tool provides a reasonable probability for early detection of potential damage conditions within customer-owned meter enclosures. As a result, once the comprehensive use of the tool has been refined and fully implemented, the information provided will allow customers to proactively address issues within their meter enclosures and thereby prevent or mitigate power quality issues and related damages.

Implementation Plan

Based on the results of the study, FPL currently expects that it will identify approximately 1,800 – 2,200 customer-owned meter enclosures annually through the use of the predictive tool, with 78 percent (± 5 percent) of the enclosures identified having some level of damage or deterioration of components requiring repair in order for the enclosure to be in proper operating condition. Due to the predictive nature of the tool, FPL believes that it is in the best interests of our customers to provide the results of these analyses directly to those customers so they will be in the best position to make the appropriate repairs to their equipment.

FPL currently plans to begin implementing a process to use the model in the second quarter of 2015 through a three-phase implementation approach. A phased implementation will allow the Company to more effectively interact with an initial group of affected customers to better understand their experiences with the use of this tool and receive their feedback, thus allowing the Company to continue to improve the opportunities afforded by the effective use of this tool. Additionally, the phased approach will allow the Company to continue to accumulate and assimilate additional data that may assist in the further validation or refinement of the model.

At this time the Company currently anticipates that the tool will be used system-wide in the first quarter of 2016. However, because FPL does not believe this type of program has been used before by other utilities, the Company may need to adjust the schedule one way or the other in order to best serve its customers. Below is the initial phased timeline.

Phases

- I. Random selection of 40% of premises identified by the predictive tool in FPL's North (Daytona and surrounding area) and South (Miami Dade) Regions (Q2 2015)
- II. Remaining premises in Phase I areas plus FPL's West Region (Q4 2015)
- III. Phase I and II plus all remaining FPL Regions (Q1 2016)

The process for the use of the tool will be as follows:

Process

- I. The predictive tool will run daily to identify suspect meter enclosures
- II. Once identified, customers within the area that is being evaluated will be notified that they are being scheduled for a proactive field inspection. A field meter technician will then be assigned to perform the visual inspection of the meter enclosure at no cost to the customer
- III. If, during the visual inspection, damage or deterioration requiring repair is noted, the customer will be placed in FPL's existing Damaged Meter Enclosure Process, which includes notifying the customer that they are required to contact a licensed electrician to perform the necessary repairs at the customer's expense. If the field technician identifies a hazardous condition that he cannot leave energized, the customer will be left temporarily without service and a restoration specialist will be called out to attempt to provide safe service to the customer. If they cannot do so, the service will be de-energized. In either case the customer will be notified of the damage and requested to resolve the condition by contacting a licensed electrician.
- IV. If no damage or deterioration is found, the meter will be exchanged. Informational material will be left with the customer, notifying them of the results of the inspection, details about meter enclosures, and the importance of maintaining that component of the customer's electrical equipment.

FPL's existing Damaged Meter Enclosure Process includes notification of the customer through a mailed letter which requests that the customer contact a licensed electrician in order to complete repairs to their enclosure. The customer is asked to contact their respective service center to schedule disconnection when the electrician is ready to complete repairs and is requested to provide proof of permit when repairs are completed. The customer is given 45 business days to complete the repairs to their enclosure and is advised that they are at risk for service disconnection if the work is not completed.

As indicated above, FPL will regularly analyze and monitor the data received through the use of this predictive tool in an effort to continuously revalidate and, where possible, improve both the tool itself and the processes used to educate and inform customers regarding potential problems within their meter enclosures. Through this process, the predictive tool is expected to provide benefits to individual customers and to the electric grid as a whole.

If you should have any questions, please do not hesitate to contact me at your convenience.

Sincerely,

s/ Kenneth M. Rubin
Kenneth M. Rubin, Senior Counsel
Florida Power & Light Company