BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of:

DOCKET NO. 20210015-EI

Petition for rate increase by Florida Power & Light Company.
_____/

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PROCEEDINGS:	HEARING
COMMISSIONERS PARTICIPATING:	CHAIRMAN GARY F. CLARK COMMISSIONER ART GRAHAM COMMISSIONER ANDREW GILES FAY COMMISSIONER MIKE LA ROSA COMMISSIONER GABRIELLA PASSIDOMO
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PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	DEBRA R. KRICK Court Reporter
APPEARANCES:	(As heretofore noted.)

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I N D E X

P R O C E E D I N G S

(Transcript follows in sequence from Volume 2.)

(Whereupon, prefiled direct testimony of Michael Spoor was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF MICHAEL SPOOR

DOCKET NO. 20210015-EI

MARCH 12, 2021

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Michael Spoor, and my business address is One Energy Place, Pensacola, Florida, 32520.

Q. By whom are you employed and what is your position?

A. I am currently employed by Gulf Power Company ("Gulf" or "Gulf Power") as the Vice President, which includes Power Delivery. Previously I was employed by Florida Power & Light Company ("FPL" or the "Company") where I served in a variety of leadership positions for over 30 years, and I remain an officer of FPL.

Q. Please describe your duties and responsibilities in that position.

A. As Vice President of Gulf Power, my responsibilities with respect to Power Delivery include the planning, engineering, construction, operation, maintenance and restoration of Gulf Power's transmission and distribution ("T&D") grid. This includes the systems, processes, analyses, and standards utilized to ensure Gulf's T&D facilities are safe, reliable, secure, effectively managed and in compliance with regulatory requirements.

Q. Please describe your educational background and professional experience.

A. I graduated from Auburn University with a Bachelor of Science degree in Industrial Engineering and from Nova Southeastern University with a Master of Business Administration. I am also a graduate of executive education programs at both Columbia University and Kellogg School of Management at Northwestern University. I am a registered professional engineer in the State of Florida. I joined FPL in 1985

and have served in a variety of leadership positions including area operations manager, manager of reliability, director of distribution system performance, director of business services and director of distribution operations. I assumed my responsibilities related to Gulf - Power Delivery in January 2019, having previously served as Vice President of Transmission and Substation with FPL. Based on my years of experience with FPL and my current Gulf position, I will be representing Power Delivery for FPL and Gulf.

Q. Are you sponsoring or co-sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- MS-1 Consolidated MFRs Co-Sponsored by Michael Spoor
- MS-2 Supplemental FPL and Gulf Standalone Information in MFR Format Co-Sponsored by Michael Spoor
- MS-3 FPL and Gulf's FPSC T&D SAIDI
- MS-4 FPL and Gulf's FPSC Distribution MAIFIe
- MS-5 National & Regional Distribution SAIDI Benchmarking
- MS-6 FPL's AFS Avoided/Actual Customer Interruptions

B. **Are you sponsoring or co-sponsoring any consolidated Minimum Filing Requirements ("MFRs") in this case?**

A. Yes. Exhibit MS-1 lists the consolidated MFRs that I am co-sponsoring.

Q. Are you sponsoring or co-sponsoring any schedules in "Supplement 1 – FPL Standalone Information in MFR Format" and "Supplement 2 – Gulf Standalone Information in MFR Format"?

A. Yes. Exhibit MS-2 lists the supplemental FPL and Gulf standalone information in MFR format that I am co-sponsoring.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe how the consolidation of Power Delivery for FPL and Gulf results in superior teamwork and operations benefiting more than 5.6 million customer accounts in Florida. I describe how Power Delivery initiatives have been and continue to be utilized to strengthen and modernize the combined T&D infrastructure, as well as support customer growth in Florida, and how our new combined team of highly dedicated and motivated employees continue to share best practices and align processes, procedures, material, applications and systems. My testimony also lays out and explains the ongoing plan for capital investments that are making our T&D infrastructure smarter, more reliable, secure and resilient. Finally, my testimony demonstrates that the combined Capital Costs and T&D Operations & Maintenance ("O&M") expenses for Power Delivery are reasonable.

Q. How will you refer to FPL and Gulf when discussing them in testimony?

A. In discussing operations or time periods prior to January 1, 2019 (when Gulf was acquired by FPL's parent company, NextEra Energy, Inc.), "FPL" and "Gulf" will refer to their pre-acquisition status, when they were legally and operationally separate companies. For operations or time periods between January 1, 2019 and January 1, 2022, "FPL" and "Gulf" will refer to their status as separate ratemaking entities, recognizing that they were merged legally on January 1, 2021 and consolidation proceeded throughout this period. Finally, in discussing operations or time periods after January 1, 2022, most references will be only to "FPL" because Gulf will be consolidated into

FPL, and FPL is proposing unified rates for the consolidated company. Therefore, unless otherwise noted, my testimony addresses requests for the consolidated company.

Q. Please summarize your testimony.

A. The integration and operation of FPL and Gulf as a single electric system will result in more efficient service delivery, improved storm response capabilities, better reliability and a superior team serving more than half of our state's population. Together, the two companies have extensive experience operating within Florida's unique geographic area and dealing with the state's weather-related challenges, which are unlike any other region in the country. Separately, FPL and Gulf have been able to provide their customers with safe, reliable and excellent electric service and customer service. The partnership of the two companies' T&D operations has already brought significant improvements to Gulf and the customers in Northwest Florida and going forward will support continued improvement for our customers across the state.

Following the experience of the 2004 and 2005 hurricane seasons, when FPL customers were impacted by seven hurricanes and Gulf customers were impacted by three hurricanes, the Florida Legislature, the Florida Public Service Commission ("FPSC" or "Commission") and Florida investor-owned utilities (including FPL and Gulf) recognized significant changes were required to construct, strengthen, and maintain an electrical grid that would be more storm resilient. More recently, in 2019, the Florida legislature reaffirmed and expanded the scope of grid strengthening by creating Section 366.96, Florida Statutes, requiring public utilities to file and secure Commission approval of Storm Protection Plans ("SPP"). These initiatives have been recognized

by our customers, public officials and others throughout the electric industry as best practices and in the best interest of our customers. These Commission-approved programs will continue in a consolidated format when FPL files a petition that, subject to the Commission's decision of unified base rates in this proceeding, would request approval to administratively consolidate the two existing plans to strengthen and build a more resilient and secure electric grid to meet the increasing expectations of our customers.

While the primary focus of the SPP is strengthening the T&D infrastructure to reduce restoration costs and outage times following extreme weather events, the primary focus of the T&D reliability initiatives is to reduce day-to-day outages and restoration times. Both FPL and Gulf T&D reliability programs have produced superior results for our customers and include multiple initiatives that prevent outages and reduce outage durations. As further explained in my testimony, in 2020, FPL was awarded the annual ReliabilityOne® top national award for the fifth time in six years, and Gulf was also a recipient of a ReliabilityOne® Award for Outstanding Reliability Performance in the Southeast (suburban/rural service) region – these recognitions are a testament to the excellent reliability being provided to FPL's and Gulf's customers.

Both FPL and Gulf have been recognized by the industry for their emergency preparedness and storm restoration efforts. Most recently, both companies received the EEI Emergency Response Assistance award for their outstanding support of other utilities during a very challenging 2020 hurricane season, and Gulf also received the

EEI Emergency Recovery award for their outstanding restoration effort following Hurricane Sally. Together, the team will be even stronger to meet the needs of our customers following any type of major event that causes an interruption of service to our customers.

Today, FPL customers, as well as Florida's economy and supporting critical infrastructure rely on, require, and increasingly expect, improved reliability, a secure electric grid, and enhanced storm response, all to meet the demands of a growing customer base. As FPL witness Barrett has stated in testimony, over 220,000 people moved to Florida in the twelve months ending July 2019, representing an average of almost 610 people per day. This trend is expected to continue as the population in Florida, the second fastest growing state, is predicted to grow at a higher rate than the overall U.S. Power Delivery will require significant ongoing capital investments in infrastructure to meet this growing demand, changes in load patterns, and challenges in customer requirements and expectations. Meeting the demands of customer growth throughout the service area will be a major portion of Power Delivery's costs, along with the associated engineering and construction effort that will be required to meet these demands.

As FPL strives for continuous improvement in every aspect of the business, we endeavor to expand and develop new opportunities to increase overall customer satisfaction, ensure compliance with all federal, regional, state, and local regulatory commissions and agency policies, and make advances that improve the electric grid.

Through the use of technology, FPL has implemented numerous programs, outlined later in my testimony, that have improved the customer experience, enabled employees to be more efficient and make timely decisions, ensure compliance, and improve the performance of the grid in a way that has allowed FPL to provide the best reliability to customers for the 15th year in a row amongst the Florida IOUs. As an example of the implementation of technology and innovation, FPL's Smart Grid was responsible for avoiding over 1.6 million FPL customer interruptions in 2020. These improvements and technology innovations have been recognized by the industry and by our customers with fewer and shorter outages. To ensure these improvements and exceptional customer service continue, Power Delivery will remain diligent to meet these extremely critical objectives to continuously improve and protect both the physical security and cybersecurity of the grid.

Going forward, as a single, integrated utility system, FPL remains committed to continuing the effective management of forward-looking investments and expenses necessary to construct, operate, maintain, and improve the T&D electrical grid. These investments and expenses result from: (1) executing FPSC storm-hardening/SPP hardening initiatives; (2) customer growth and system expansion; (3) executing our comprehensive T&D reliability/grid modernization initiatives; (4) servicing the electrical grid/other support activities; and (5) complying with regulatory requirements. Effective management of these programs has resulted in superior service such as best-ever FPSC Systems Average Interruption Duration Index ("SAIDI") in 2019 and

improved upon that performance again in 2020 for both FPL and Gulf while also delivering outstanding value for our customers.

Together, FPL and Gulf are positioned to meet these challenges through the continued and successful implementation of the outlined programs to strengthen, modernize and improve the reliability of the electric grid. These efforts are producing superior results and providing a foundation for continuing the capital investments targeted to improve the reliability, resilience and security of the grid.

II. OVERVIEW OF THE COMBINED COMPANY GRID

Q. Please provide an overview of FPL's T&D Grid.

A. As a combined utility system, FPL currently serves more than 5.6 million customer accounts representing more than 11 million people in 43 counties in peninsular and Northwest Florida, with approximately 77,000 miles of distribution lines and 9,000 miles of high-voltage transmission lines.

Q. Do operating and maintaining electrical systems in Florida present unique challenges?

A. Yes. As an electric service provider in the state of Florida, FPL is well-acquainted with Florida's unique geographic and weather-related challenges, which in terms of frequency and severity, are unlike those faced by any other electric system in the country. The following points highlight the challenges: (1) Florida is more susceptible to tropical storms, hurricanes, and major hurricanes (Category 3 or higher) than any

other state; (2) FPL's service area is the most storm-susceptible within Florida, as it has approximately 610 miles of coastline (one of the longest of any utility in the U.S.) directly exposed to storms from the Atlantic Ocean and the Gulf of Mexico; (3) Because the vast majority of our customers live within 20 miles of the coast, a significant portion of our electric infrastructure is constantly exposed to the corrosive effects of salt spray and to the highest wind speeds when a storm hits; (4) Florida also experiences more thunderstorms and lightning strikes than any other U.S. region; and (5) Florida's subtropical climate promotes one of the fastest vegetation growth rates in the nation.

III. CONSOLIDATION OF POWER DELIVERY FOR FPL AND GULF

Q. How have the Power Delivery organizations and systems of the two companies been consolidated?

A. Since the acquisition of Gulf by NextEra Energy Inc., the parent company of FPL, the two utilities have engaged in best practice sharing and the process of operational consolidation. As an integrated team bringing together best practices from each system, we undertook to execute the same long-term strategy that has been our core focus at FPL for many years:

- Unyielding commitment to customer satisfaction
- Focus on efficiency and best-in-class cost performance
- Investing capital in ways that benefit customers

As part of the operational consolidation, a new transmission line, the North Florida Resiliency Connection ("NFRC"), is being constructed to enhance the existing electrical connection between these two systems and provide additional operational benefits. The NFRC is expected to be completed in mid-2022.

Q. Please describe a few of the benefits of consolidating the two Power Delivery organizations.

A. FPL has been able to provide its customers with safe, reliable and excellent service. The consolidation of the Gulf and FPL Power Delivery organizations has combined the extensive experience, knowledge, and excellent customer service of two outstanding companies. The successful partnership of the two organizations to function as one company has already resulted in significant service improvements in Northwest Florida and will provide further opportunities for us to deliver electric service to all of our customers more reliably, safely and efficiently.

FPL has a culture of continuous improvement and the Company and its employees have been recognized in several key areas of performance including reliability, emergency preparedness, customer satisfaction, safety and technology adoption. Gulf has a long and proud tradition of excellent service to its customers and communities in Northwest Florida. The combination of the two companies creates a superior team, providing excellent service for customers. This will be accomplished through joint efforts to deploy Storm Protection Plans, and ultimately one consolidated Storm Protection Plan, to reduce restoration costs and outage times during extreme weather events and to

invest in our transmission and distribution infrastructure and in our people in ways that will help achieve best-in-class day-to-day reliability and customer service.

Q. Please provide additional details regarding the NFRC and some of the benefits it will provide.

A. The NFRC is a 176-mile, 161 kV transmission line connecting Gulf's current service area and system in Northwest Florida with FPL's system in northern Florida. Specifically, the NFRC will connect FPL's system across the state from Sinai Cemetery substation in Northwest Florida to Raven substation in the North Florida region. The NFRC is part of an ongoing investment to enhance electric service reliability and resiliency in North and Northwest Florida. On October 10, 2018, Hurricane Michael severely damaged the transmission system in the region, highlighting the importance of a resilient transmission infrastructure. The NFRC will provide an additional hardened transmission circuit from a different part of the state into the region, providing additional redundancy to the transmission grid. As discussed by FPL witness Forrest, the NFRC also will be beneficial to the integration of the FPL electric grid by allowing bi-directional energy transfer capabilities within the state and economic dispatch of the combined fleet of generation assets. The NFRC will enable the transfer of up to 850 MW across FPL's combined service area. This connection will provide for cleaner, more reliable and lower cost energy for all customers. FPL witness Sim presents the analysis that demonstrates the NFRC's economic benefits.

IV. SAFETY

Q. Please describe FPL's commitment to safety.

A. The Company considers safety to be integral to effective operations and indicative of overall performance. The superior reliability and customer service provided by FPL and Gulf have been delivered while maintaining a continual focus on employee safety. As a result of concerted and sustained efforts, FPL has achieved a 75% improvement over the last decade and Gulf has achieved a 93% improvement since acquisition in the Occupational Safety & Health Administration's ("OSHA") industry-standard metric of reportable injuries per 200,000 man-hours. FPL's measure of days away and/or restricted time ("DART") due to workplace injuries improved by 78% over the same time period, while Gulf had zero working time lost due to workplace injuries in 2020. A key reason for this improvement is our continued commitment to safety by leveraging technology and engineering out injuries with enhanced tools, processes, and equipment. Safety programs involve establishing a partnership with employees to institute an environment where actions are guided by our safety principles. These are in addition to the corporate-sponsored safety program "Zero Today," which serves to constantly reinforce the need for everyone's continued commitment to safety principles. "Zero Today" is our commitment to maintaining a safe work environment and creating an inclusive safety culture where safety is everyone's job – a philosophy that all injuries are preventable.

V. STORM HARDENING THE INFRASTRUCTURE

Q. When did FPL and Gulf undertake efforts to strengthen their infrastructure?

A. In 2006, following the significant 2004/2005 hurricane seasons (when seven hurricanes impacted FPL's customers and three hurricanes impacted Gulf's customers), FPL and Gulf began to implement their FPSC-approved initiatives to strengthen the T&D infrastructure.

Q. Are there similarities in the approaches undertaken by FPL and Gulf to strengthen their infrastructures since 2006?

A. Yes. As described in FPSC Docket Nos. 20200071-EI and 20200070-EI, FPL's and Gulf's SPPs are largely a continuation of successful storm hardening and storm preparedness programs previously approved by the Commission. Similarly, both companies recently initiated pilot programs to harden laterals. FPL, Gulf, and all parties to the above referenced docket amicably reached a Commission-approved settlement, agreeing that these SPP programs are in the public interest.[1]

Q. What has been the impact of grid investments to strengthen the infrastructure?

A. As provided in Docket No. 20170215-EU (Review of Florida's Electric Utility Hurricane Preparedness and Restoration Actions 2018), FPL's restoration efforts during Hurricane Irma saw significant improvements in overall restoration results as compared to Hurricane Wilma in 2005, in large measure due to the Company's investments in Commission-approved storm hardening and hurricane preparedness initiatives following the 2004/2005 hurricane seasons. The impact of these investments

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was again evident during the 2020 hurricane season, where there were a record 30 named storms, surpassing the record of 28 named storms in 2005. For instance, during Tropical Storm Eta's "double" Florida landfall in 2020, FPL's smart grid technology investments helped avoid more than 140,000 outages, which allowed our team to restore customers with outages faster, with the average customer restored in approximately two and a half hours.

VI. T&D RELIABILITY PROGRAM

Q. Please provide an overview of FPL's T&D reliability program.

A. Today's society's ever-increasing reliance on digital technology and customer's increasing demands for reliable service demand a focus on continuous reliability improvement. The focus of the T&D reliability initiatives is to reduce day-to-day outages and restoration times. FPL's and Gulf's combined T&D reliability program, which has produced superior results for our customers, includes multiple initiatives that prevent outages and reduce outage durations. For distribution, in addition to smart grid technology, and predictive and proactive reliability measures, reliability initiatives are also developed by identifying and analyzing causes of past interruptions. FPL then targets those interruptions' causes that, if remedied/repaired, will result in the largest benefits for customers. For the transmission system, reliability initiatives focus on facility/system assessments, targeted maintenance, prevention through prediction, utilizing smart grid technology, and prevention of recurrence. As previously discussed

in my testimony, the NFRC will be beneficial to the operation of the FPL transmission grid, providing additional redundancy.

Q. Please provide an overview of FPL's T&D reliability initiatives' results.

A. The T&D reliability initiatives employed by FPL continue to produce improved and superior reliability results. In 2019, FPL and Gulf had their best-ever performance results for FPSC T&D System Average Interruption Duration Index ("SAIDI"). In 2020, FPL and Gulf both once again had best-ever performance results for FPSC SAIDI and both had their best-ever FPSC Distribution Momentary Average Interruption Frequency Event Index ("MAIFIe") as can be seen on Exhibits MS-3 and MS-4. For FPL, these best-ever 2020 FPSC T&D SAIDI and FPSC Distribution MAIFIe results are 39% and 77%, respectively, better than the results achieved in 2006. For Gulf, these best-ever 2020 FPSC T&D SAIDI and FPSC Distribution MAIFIe are 50% and 30%, respectively, better than the results achieved since 2018. Additionally, for the 15th consecutive year, FPL's 2020 FPSC T&D SAIDI was the best among the Florida IOUs. Lastly, I'm proud to say that in 2020, FPL was the first investor-owned utility in Florida to achieve FPSC T&D SAIDI of less than 50 minutes.

Exhibit MS-5 also shows FPL's Distribution SAIDI performance (calculated using the Institute of Electrical and Electronics Engineers ("IEEE") 2.5 beta methodology) for 2019 (51.46 minutes) which ranked 58% better than the national average. This exhibit also shows Gulf's Distribution SAIDI Performance for 2019 (72.47 minutes) which ranked 41% better than the national average. This ranking was determined utilizing the most recent data reflected in PA Consulting's annual 2019 ReliabilityOne®

benchmarking summary and the U.S. Energy Information Administration's ("EIA") 2019 Annual Industry Report. This benchmarking study included 2019 Distribution SAIDI results (the vast majority calculated using IEEE's 2.5 beta methodology) from 114 IOUs throughout the nation. Achieving these excellent reliability performance results in 2019 demonstrate that our grid modernization and reliability initiatives are effective and beneficial. With FPL and Gulf's continued commitment and the necessary investments to employ these initiatives, we expect our superior reliability performance will continue to improve.

Q. Please provide specific examples of FPL's key distribution system reliability initiatives.

A. Key distribution reliability initiatives include:

Grid Modernization/Smart Grid – This program includes several initiatives that have been a significant focus of FPL, as part of an effort to develop a modern, automated and self-healing grid. Included in these initiatives are smart devices, e.g., automated feeder switches ("AFS"), automated lateral switches ("ALS"), automated transformer switches ("ATS") and fault current indicators ("FCI") that automatically identify and/or isolate problematic line sections and/or clear temporary faults– avoiding and/or mitigating interruptions and reducing restoration times and costs. These devices are providing significant reliability improvement results. For example, as shown in Exhibit MS-6, AFS devices were responsible for avoiding over 1.6 million FPL customer interruptions in 2020. This illustrates that smart grid technology improves reliability for our customers.

Targeted Performance Improvement – This includes multiple initiatives that target infrastructure/devices experiencing a higher number of outages and/or momentary interruptions. Examples of these reliability initiatives include prioritization feeders, submarine cable, momentary outliers and device outliers.

Underground Cable - This initiative addresses "direct-buried" feeder and lateral cable failure modes through rehabilitation (by injecting cable with silicone, which extends its useful life) or, when rehabilitation is not an option, replacement of the cable. These solutions prevent interruptions and improve service.

Vegetation Management – While providing storm benefits, vegetation management continues to also be a key, long-standing reliability initiative providing day-to-day reliability benefits for customers. Vegetation-related outages continue to be one of the top causes of interruptions, primarily the result of Florida's year-round growth cycle. With annual trimming cycle of feeders and laterals and mid-cycle feeder trimming, FPL will average approximately 17,000 miles annually, which is the equivalent of trimming a line from Tallahassee to Antarctica and back. FPL also continues to promote our "Right Tree, Right Place" public education program with local governments and customers to educate them on our trimming program, practices, safety issues and proper tree placement. This program is part of FPL's SPP moving forward (2022).

Q. Please provide FPL specific examples of key reliability initiatives in transmission.

A. Key transmission system reliability initiatives include:

Facility/System Assessments – Under this initiative, transmission line and substation assessments are conducted utilizing equipment diagnostics and both on-site and remote system surveillance in order to evaluate and determine the health of facilities and equipment. Holistic station and equipment assessments, including oil sampling/testing, equipment/protective systems testing, thermal imaging and climbing inspections are performed, which provide information used to prevent or predict equipment/facility failures. Also, certain system surveillance is accomplished through equipment performance monitoring and diagnostics, using remote monitoring tools and analysis programs.

Grid Modernization/Smart Grid – FPL continues to incorporate intelligent technology within substation systems to better anticipate and respond to system disturbances. For example, the substation transformer relay scheme upgrades, use of microprocessor-based systems to gather data, assess equipment operating conditions, and the use of auto-restoration and self-healing systems result in improved reliability, increased situational awareness of grid operations and optimized asset utilization.

Prevention through Prediction – By combining remaining useful life determination and risk assessment, a plan is developed to replace major transmission equipment and facilities in a more predictive manner. When such replacements are made, technological advances and design improvements are incorporated to reduce future interruptions and maximize asset utilization.

Prevention of Recurrence – Through the use of the Event Response Process (where each outage event is recorded, classified and analyzed), countermeasures are developed to prevent the recurrence of similar events. For example, if it is determined that a relay operated improperly, the root cause is determined, and countermeasures are implemented to similar devices throughout the system to prevent recurrence.

Targeted Maintenance - Information obtained during condition assessments is evaluated using predictive models. A plan is then developed to replace or conduct targeted maintenance on major equipment and facilities. Targeted maintenance extends the useful life of equipment and minimizes costs by deferring the need for substantial investment in new equipment and facilities.

Vegetation Management – Transmission facilities also must be protected from Florida's abundant and fast-growing vegetation. To ensure system stability and compliance with North American Electric Reliability Corporation ("NERC") reliability standards, 100% of the transmission rights-of-way are inspected twice a year, with necessary trimming identified and completed. This program is part of FPL's SPP moving forward (2022).

Q. Please describe how reliability/grid modernization programs such as the 500kV rebuild program benefit customers?

A. The combination of facilities/system assessments and age of the critical infrastructure has led to a plan to rebuild the 500kV system, the electricity delivery backbone. The majority of the 500kV transmission structures were originally built during the same

timeframes in the 1970s and 1980s and will be replaced with galvanized steel poles. Their replacement is crucial to ensuring the continued performance of the electric system in Florida.

The rebuild program replaces the structures which are nearing end of useful life and will also require new foundations. Replacement structures are engineered and constructed to meet or exceed current NESC design requirements, providing the additional benefit of enhanced resiliency. The 500kV system provides Florida means to transport bulk power around the state and serves as Florida's only major tie to the eastern interconnection of the United States. As such, it is imperative that this critical transmission infrastructure in the state be functioning properly and secure to meet FPL's goal of providing clean, safe, and reliable energy solutions now and in the future.

VII. EMERGENCY PREPAREDNESS RESPONSE

Q. Does FPL have plans/processes in place to respond to emergency events?

A. Yes. NextEra Energy's/FPL's Corporate Emergency Management Plan ("CEMP") provides a framework by which FPL and Gulf Power can jointly respond effectively to all types of threats and hazards. The CEMP applies to all threats and incidents including severe weather, cybersecurity, grid or supply disruptions, physical security, floods, fires, chemical spills, pandemics, civil unrest, or any other hazards that threaten the company's systems, employees or contractors.

Q. Does FPL conduct training and exercises to ensure the organization is ready to respond to potential threats or incidents?

A. Yes. FPL's comprehensive and multifaceted emergency response training occurs throughout the year to ensure that employees are ready and prepared to respond to an emergency event. Additionally, for certain potential significant threats or events, simulated events/response exercises are conducted annually to enhance training and preparedness (e.g., company-wide storm dry run, capacity shortfall, and cybersecurity simulations/exercises).

Q. Please describe FPL emergency preparedness and training.

A. Both companies engage year-round in emergency preparations and drills. The 2020 dry-run exercise was conducted jointly by FPL and Gulf, simulating a hurricane impacting both utilities during a pandemic event. Interactions between FPL, Gulf and other agencies typically take place as a result of emergency preparation drills, and other external entities (e.g., the FPSC, Florida Office of Public Counsel, U.S. DOE, the Edison Electric Institute ("EEI"), and other utilities) routinely attend annual storm dry run events to observe and learn about our restoration processes.

As part of FPL's continued leadership in emergency preparedness and response, FPL serves as a founding member of the National Response Executive Committee ("NREC"). The NREC is an industry group, as part of EEI, that is responsible for overseeing nationwide mutual assistance and resource sharing during events that are larger than can be accommodated through the industry regional mutual assistance processes. FPL serves as a founding member, closely coordinating with the Southeastern

Electric Exchange ("SEE") and other industry regional groups as needed to provide and receive mutual assistance.

In the area of cybersecurity, FPL performs annual internal drills with the participation of federal agencies (e.g., DHS, USSS, FBI) to ensure readiness of the organization, participates with other electric utilities across the country in NERC's biennial GridEx exercise and participates in industry forums (e.g., Electricity Subsector Coordinating Council and NERC activities) to ensure lessons learned are applied.

Q. Please provide other examples of Power Delivery's efforts to ensure emergency preparedness.

A. For storms, in addition to providing significant employee training, other planning and preparations include securing necessary foreign crew resources, storm staging sites, logistics (e.g., lodging), necessary equipment, inventory and having communication capabilities and processes ready. Having these plans and processes in place prior to each hurricane season allows FPL to execute its effective restoration plans as soon as it is safely possible.

Q. Please comment on how customers will benefit through the combination of the two Emergency Preparedness organizations?

A. FPL and Gulf have proven that they are industry leaders when it comes to the preparations and executions following major events. Responses to storms such as Hurricane Matthew and Hurricane Irma that impacted FPL's system in 2016 and 2017 and Hurricane Michael that impacted Gulf's system in 2018 are examples where these two companies excelled. While the companies have supported each other with

resources in the past, the benefits of combining these two teams and integrating best practices became evident in 2020 after the direct impact to Gulf's system by Hurricane Sally, a powerful Category 2 storm, in which 285,000 customers were restored in just 5 days, improving the original Estimated Restoration Time (ERT). The continued consolidation of these teams, processes, and systems across the Florida footprint will positively impact our customers in a substantial way both prior to and following major events that impact electric service.

VIII. GROWTH AND EXPANSION

Q. How do new service accounts, major new construction projects and increased electrical demand in an area affect FPL's T&D planning operations?

A. All of these factors can significantly impact resources, costs, and reliability. From 2019-2023, FPL expects to cumulatively add approximately 425,000 new service accounts as described by FPL witness Park. This trend is expected to continue as Florida is the second fastest growing state in the nation and predicted to outpace the growth rate of the overall United States. Accommodating new customers, whether a typical residential customer or a major project (e.g., the American Dream Miami, expected to break ground mid-2021 and include 6.2 million square feet of retail and entertainment space), requires the installation of new infrastructure. Depending on the new customer's load, additional infrastructure required could be as simple as installing a single service to a home or business or could require constructing new feeders and/or transmission lines and substations. Similarly, the cumulative effect of increases in load due to new

customers and/or increased customer usage/demand in certain areas also can require upgrades to existing infrastructure and/or the installation of new facilities. FPL's fast-growing service area will require significant ongoing capital investment to meet customer growth, additional load requirements, and new construction development. Importantly, our customers are depending on us now more than ever and Power Delivery is committed to meet those expectations and provide a safe, reliable, and secure electric grid to meet their needs.

Major new projects throughout FPL's combined service area also can have a significant impact on resources and costs (e.g., new feeders, new transmission lines and even new T&D substations). In addition to the American Dream Miami Project mentioned earlier, an example of two other major projects that are currently under construction or expected to be under construction during 2020-2022:

- Florida Space Coast has several ongoing projects, including development of Blue Origin's Launch Complex 36, which will be used to launch the reusable New Glenn rocket.
- Baptist Hospital, a new $600 million campus in Pensacola, will require construction of a new feeder and upgrades to an additional feeder for redundant sources.

While these are considered major construction projects for the electric grid, they are also examples of community economic growth projects that impact growth in the residential and commercial markets as well.

Q. As part of the required expansion of the system to meet the growing customer demand, please describe some of the considerations that the Company must take into account in acquiring and holding T&D Property Held for Future Use ("PHFU").

A. Customer growth, increased electrical demands, and major new construction projects, require T&D to acquire and hold PHFU for this new infrastructure. As provided in MFR B-15, these T&D PHFU investments have been identified as being geographically and strategically located and necessary to meet future customer load growth, improve customer reliability, comply with NERC standards regulating the reliability of the grid and/or integrate future generation into the grid. With suitable properties on hand for future needs, FPL avoids being in a time pressure situation or being limited on suitable options, both scenarios in which property sellers may take advantage, resulting in higher costs.

T&D substations and transmission lines can take years to plan, design, permit and construct. This includes securing necessary sites and properties. Additionally, the annual planning process is very dynamic and, by virtue of its close linkage to load growth forecasts, can and often does result in yearly modifications of system expansion plans. PHFU ensures we are able to move an adequate and reliable supply of power across the system to meet an ever-evolving set of electrical grid conditions and needs.

IX. REGULATORY COMPLIANCE

Q. Are the operation and maintenance of FPL's T&D systems significantly impacted by mandated compliance and regulations?

A. Yes. As a regulated electric utility, FPL's and Gulf's combined T&D systems operation and facilities must comply with a variety of policies, standards, orders and requirements of federal, regional, state and local regulatory commissions and agencies. In addition to FPSC rules and requirements, these include the requirements of Federal Energy Regulatory Commission ("FERC"), NERC, the U.S. Environmental Protection Agency ("EPA"), U.S. Department of Homeland Security, Occupational Safety and Health Administration, Florida Department of Environmental Protection ("FDEP"), and numerous cities and counties. Of course, compliance with newly mandated requirements can incrementally increase costs for new and existing assets and require implementation of new and/or enhanced processes and related training.

Q. Please provide examples of rules, regulations and requirements that can have a significant impact on FPL's T&D operations, processes and costs.

A. Under the direction of FERC, NERC currently enforces approximately 100 reliability standards for physical security and cybersecurity, containing in excess of 1,600 requirements and sub-requirements that govern the operation and maintenance of FPL's bulk electric system as well as, prevent malicious cyber-attacks on the grid. New standards and requirements continue to be added to NERC's list for mandatory compliance. For example, in January 2020, new cybersecurity requirements became enforceable for approximately one-third of FPL's and Gulf's electric substations and

generating sites, and in October 2020, NERC began enforcing a new standard that addresses the supply chain risk management associated with all new electronic devices newly installed/replaced in FPL's grid control centers and most important substation and generating sites.

FPL is also subject to a wide range of environmental laws and regulations (e.g., U.S. EPA, FDEP, the Florida Fish and Wildlife Conservation Commission) to protect our natural resources. These laws and regulations require FPL to incorporate environmental protection/stewardship into the design, construction, operation and maintenance of its T&D facilities.

Lastly, Regulatory Compliance includes obligations associated with the construction and relocation of facilities as required by state agencies, such as the Florida Department of Transportation, and local municipalities to meet the needs of the state and communities we serve.

X. CUSTOMER SATISFACTION / TECHNOLOGY / RECOGNITION

Q. What measures have been implemented to improve customer communications?

A. FPL and Gulf continually strive to improve the service we provide our customers. In addition to improving the reliability of electric service, this means increasing overall customer satisfaction with initiatives such as how we communicate with our customers and provide them better and more timely information. By providing easier

access to better information, customers can make more informed decisions. An example of a recent initiative deployed to improve customers' overall service and satisfaction is the "FPL Project Portal" on FPL's website (www.FPL.com). The FPL Project Portal is part of our Major Projects and Construction Services organization. The FPL Project Portal makes it easier to work with FPL on construction projects, resulting in improved partnerships with large builders/developers. The Project Portal allows customers to initiate work, check status of jobs and find information about their projects. The Project Portal was recognized with the SEE's 2019 Chairman's Award, which "honors the one project that is deemed most outstanding for all category winners – the 'Best of the Best'."

More recently, FPL has expanded this concept with the Inspection Portal. The Inspection Portal streamlines the process of reporting completed inspections by municipalities. At the end of February 2021, the Inspection Portal was selected as a winner in the Customer Service & Billing Category of the SEE 2021 Industry Excellence Awards.

Q. Please elaborate on how the FPL Project Portal, as well as the more recent Inspection Portal, improved service for customers.

A. FPL has continued to push the boundaries of service excellence by providing customers with new self-service options that improve the user experience and enable customers to better track and manage their projects. The Project Portal has allowed FPL to provide construction customers an enhanced level of customer support through the introduction of new features, including a Centralized Appointment Calendar, Self-Scheduling

Disconnect & Reconnect service ("D&R") and Construction Services Interactive Voice Response ("IVR").

Prior to the Project Portal, when a customer needed to schedule an appointment with FPL, each FPL service area had its own method of tracking customer appointments, and there was no visibility between areas. The Project Portal enhanced the appointment process by moving to a centralized appointment calendar and provided the database to implement a customer self-service feature for making appointments. Using the Project Portal, customers can select the appointment type and see available time slots to schedule an available date and time convenient for them. Artificial intelligence functionality takes the customer's information and creates the appropriate work request in order to schedule it to the workforce. Amazon Web Services ("AWS") was implemented to call the customer the day before the scheduled appointment. The customer was presented with the options to confirm, reschedule, or cancel an appointment.

The local engineering areas received more than 100,000 calls in 2018. Many of these calls were for issues best handled by other departments or where customers could have benefited from self-service. FPL implemented an IVR system to give customers an option to have their billing and account adjustment questions routed to the correct departments. It leverages Project Portal self-service options for verifying construction schedules, customer requirements and status of municipal inspections. The IVR system provides clarity and transparency along with ease of routing customer inquiries to the

proper segment channels, resulting in improved efficiency in the engineering department and an improved customer experience.

The Inspection Portal is FPL's new premier municipal interface that allows real-time reporting of approved inspections to FPL. The robust tool was created to streamline communications through automation and eliminate outdated processes that led to customer and municipal dissatisfaction. These new enhancements are paving the way for a new era of self-service in the electric industry.

The results speak for themselves. Project Portal usage has doubled over the past year, and FPL expects increasing interest in Inspection Portal. Customers are excited about how this industry-changing and innovative technology makes their lives easier.

Q. How has FPL used technology to improve system reliability?

A. FPL has focused its efforts to significantly increase the utilization of information technology and automation to modernize its grid to make it smarter, self-healing and more reliable. This focus was initiated by FPL in 2006 with the installation of AMI that provides two-way communication to the customer's meter and has continued with other smart grid devices such as AFS, ALS, ATS and FCI. In addition to improving reliability, a more modernized grid also reduces costs, as restoration costs are reduced with fewer outages. As previously discussed, FPL's smart grid helped avoid more than 140,000 outages during Tropical Storm Eta alone. In addition, FPL has implemented other technology initiatives, which are described below:

System Control Center – FPL's System Control Center ("SCC") is a state-of-the-art facility that enables more efficient operation and coordination of FPL's transmission and substation network. This includes ensuring full compliance with all applicable standards, e.g., NERC and Critical Infrastructure Protection ("CIP") cybersecurity standards/requirements. The quality and availability of energy management system tools and status information on FPL's transmission and substation system allow for improved and continuous monitoring and control by system operators.

Distribution Control Center ("DCC") – FPL's DCC is a state-of-the-art facility that enables more efficient operation and coordination of FPL's distribution network.

Power Delivery Diagnostic Center ("PDDC") – The PDDC acts as a "nerve center" for FPL's smart grid. The PDDC monitors, in real-time, critical operating parameters of T&D equipment/devices; gathers and analyzes data from advanced sensors, monitors, switches, smart meters, etc.; and utilizes FPL-developed analyses, applications, algorithms and other tools to predict likely equipment failures so that remediation can be efficiently planned and completed before a failure/outage occurs. The PDDC also provides analyses of system events and coordination and support to the SCC, DCC, and T&D operations. For instance, when an outage event occurs, the PDDC immediately begins to collect and analyze pertinent data, while the restoration crew is still traveling to the event site. Equipped with this information upon arrival, the restoration crew can perform the restoration more quickly and effectively.

Restoration Spatial View ("RSV") – RSV, an FPL-developed application that runs on tablets, smart phones, and laptops, provides real-time situational awareness (from multiple systems) and acts as a "one-stop shop" for restoration crews. It provides real-time outage information, weather radar/alerts, electrical network information, customer energy consumption, voltage, crew location and more - all layered on a map view. A significant customer benefit includes the restoration confirmation feature, which allows restoration crews to confirm the power status of all smart meters affected by an outage before leaving the area. This has resulted in fewer repeat customer calls/restoration crew visits.

Drones - FPL uses drones with high definition and thermal cameras in day-to-day operations and after severe weather events to assess overhead power equipment. Drones are ideally suited for this work because they can safely and quickly deliver high-quality photos and videos of power lines in a way that can minimize environmental impact. They also help FPL to not inconvenience customers to gain access to our equipment on their property.

In day-to-day operations, FPL uses drones to perform maintenance inspections of equipment. These proactive assessments help FPL identify any areas of concern before an outage can occur. Following a severe weather event, drones help us assess damage in areas that are flooded or impassable due to collapsed vegetation.

Predictive Algorithms – In 2017, the Association of Edison Illuminating Companies ("AEIC") awarded a team from FPL the prestigious AEIC Achievement Award for a technology breakthrough in anticipating intermittent power failures and, in turn, improving the company's ability to take preventative action. The team received the esteemed award for developing a complex algorithm to detect distinct patterns in residential smart meters, allowing it to predict individual customer outages days in advance and avoid power loss.

FPL's proactive ticket notification system uses smart grid data to predict when a customer is about to experience an outage, enabling crews to deploy to an affected area. In many cases, this allows crews to resolve the issue before a customer is even aware of a problem.

Q. Have FPL and Gulf received recognition for efforts to provide safe and reliable service for customers?

A. Yes. In 2020, FPL was honored with the ReliabilityOne® National Reliability Excellence Award, presented by PA Consulting, for the fifth time in six years, and Gulf was honored with the ReliabilityOne® Award for Outstanding Reliability Performance in the Southeast (suburban/rural service) region. The ReliabilityOne® National Reliability Award is given to the award recipient that has demonstrated sustained leadership, innovation and achievement in the area of electric reliability. Criteria for the award is based primarily on system reliability statistics that measure the frequency and duration of customer outages. After provisional recipients are selected, each company undergoes an on-site certification process, which provides an independent

review and confirmation of the policies, processes and systems used to collect, analyze and report a company's reliability results. In addition to the national award in 2020, FPL was awarded the ReliabilityOne® for Outstanding Reliability Performance in the Southeast (metropolitan) region for the seventh straight year. In 2016 and 2019, FPL also earned the ReliabilityOne® Award for Outstanding Technology and Innovation.

Finally, both FPL and Gulf earned awards from EEI for their efforts during the 2016, 2017, 2018 and 2020 hurricane seasons, including the Emergency Assistance Award for Puerto Rico Power Restoration. Gulf received EEI's Emergency Recovery award for its outstanding power restoration efforts after Hurricane Michael in 2018 and Hurricane Sally in 2020. Both companies received the EEI Emergency Response Assistance award for their exceptional support of other utilities during the active 2020 hurricane season.

Q. Have these initiatives been recognized by customers?

A. Yes, the cumulative success of FPL's initiatives to improve our service and how we communicate with our customers has contributed to reducing FPSC reliability-related logged complaints per 10,000 customers by 32% for FPL since 2016.

XI. FPL T&D COSTS

Q. Please provide an overview of FPL's actual/forecasted T&D costs.

A. FPL's and Gulf's combined T&D capital costs and O&M expenses result from five major cost drivers: (1) FPSC storm hardening and SPP; (2) growth; (3) reliability/grid modernization; (4) grid servicing/support; and (5) complying with regulatory agency

requirements. For T&D capital costs, the major drivers have been FPSC storm hardening, growth, and reliability/grid modernization. For T&D O&M expenses, the major drivers have been grid servicing/support, regulatory compliance and reliability/grid modernization. For 2021-2023, these same major cost categories are expected to continue to drive T&D capital costs and O&M expenses.

A. T&D CAPITAL COSTS

Q. What is FPL's and Gulf's Combined T&D actual/projected base (i.e., non-clause) capital costs for 2019-2022 and 2023?

A. FPL's and Gulf's combined T&D base (i.e., non-clause) capital costs for 2019-2022 and for 2023 are $12.72 billion and $2.98 billion, respectively. As discussed, the major drivers for capital costs historically and for the projected period are the same.

Q. Please provide 2019-2023 base (i.e., non-clause) capital costs by major drivers for FPL and Gulf.

A. Below are the 2019-2023 base (i.e., non-clause) capital costs for each major driver for FPL and Gulf:

($Billions)

Major Driver	2019	2020	2021	2022	2023	2019-2023 ($)	2019-2023 (%)
FPSC Storm Hardening/SPP	$0.85	$0.96	$0.14	$0.15	$0.15	$2.24	14%
Growth	$0.87	$0.99	$1.40	$1.26	$1.35	$5.86	37%
Reliability/Grid Modernization	$0.94	$1.15	$1.36	$1.12	$1.06	$5.64	36%
Grid Servicing/Support	$0.31	$0.29	$0.34	$0.31	$0.35	$1.61	10%
Regulatory Compliance	$0.06	$0.06	$0.07	$0.08	$0.07	$0.35	2%
Total	$3.03	$3.45	$3.31	$2.92	$2.98	$15.69	100%

Note: Totals may not add due to rounding.

Each of these drivers, their specific components and their importance in maintaining a resilient, reliable and compliant T&D system, were discussed earlier in my testimony.

Q. Please provide additional details for capital costs driven by FPSC Storm Hardening and SPP.

A. While 2020 is a transition year between the two FPSC rules, the capital costs for the FPSC Storm Hardening (under the now repealed Rule 25-6.0342, F.A.C.) category for 2019 and 2020 is $0.85 billion and $0.96 billion, respectively, resulting from FPL's and Gulf's efforts to further harden the T&D grid (e.g., feeder hardening) through base rates. For 2021-2023, storm hardening capital expenditures in years 2021-2023 have been or will be requested for recovery through the SPPCRC (Docket No. 20200092-EI, Order No. PSC-2020-0409-AS-EI, SPP Docket No. 20200071-EI, Order No. PSC-2020-0293-AS-ES) with cost of removal related to existing assets of $0.14 billion, $0.15 billion, $0.15 billion in years 2021-2023, respectively, forecasted to be recovered in base rates. The only capital expenditures not currently recoverable through SPPCRC relates to Gulf's Transmission Inspection Program, which is forecasted to be approximately $2.6 million annually for 2022 and 2023. FPL witness Fuentes is proposing a Company adjustment to move these capital expenditures to the SPPCRC beginning in 2022.

Q. Please provide additional details for capital costs driven by Growth.

A. The capital costs associated with the cumulative installation of new service lines to serve approximately 425,000 new service accounts being added, averages approximately $0.26 billion each year for 2019-2022 and $0.28 billion for 2023. Capital costs for expansion and upgrades of both T&D facilities/infrastructure to ensure the safe and reliable operation of the grid for 2019-2022 are $0.50 billion, and

$0.26 billion for 2023. Remaining capital costs in this cost category associated with new large major construction projects and new streetlight systems for 2019-22, averages approximately $0.74 billion each year and $0.80 billion for 2023.

Q. Please provide additional details for capital costs driven by Reliability/Grid Modernization.

A. Capital costs associated with the distribution reliability/grid modernization initiatives for 2019-2022 and 2023 are $1.59 billion and $0.38 billion, respectively. For transmission reliability, capital costs for 2019-2022 and 2023 are $2.40 billion and $0.68 billion, respectively. Lastly, capital expenditure associated with the NFRC for 2019-2022 are $0.59 billion with anticipated completion in mid-2022.

Q. Please provide additional details for capital costs driven by distribution-related Reliability/Grid Modernization.

A. The installation of distribution smart grid devices account for $0.80 billion for 2019-2022 and $0.19 billion for 2023. The capital costs associated with the underground inspection, repair and rehabilitation of underground are $0.07 billion for 2019-2022 and $0.01 billion for 2023. The remaining components for this category, accounting for $0.72 billion for 2019-2022 and $0.17 billion for 2023, are associated with other various distribution reliability initiatives such as hand-hole and pad-mount transformer and submarine cable replacements.

Q. Please provide additional details for capital costs driven by transmission-related Reliability/Grid Modernization.

A. Capital costs associated with transmission facility/system assessments, replacements and the prevention through prediction/reoccurrence initiatives account for $0.70 billion

in 2019-2022 and $0.24 billion for 2023. The remaining transmission reliability-related capital costs are associated with modernizing the transmission grid (e.g., 500kV Rebuild program, upgrading/digitizing substation transformer relays and installing substation fault information capabilities). Capital costs for these initiatives are $1.70 billion for 2019-2022 and $0.44 billion for 2023.

Q. Please provide details for capital costs driven by Grid Servicing/Support.

A. Capital costs associated with the three major components of this key driver category include: (1) restoring customers' service, $0.54 billion for 2019-2022, and $0.13 billion for 2023; (2) the company's vehicle fleet, $0.20 billion for 2019-2022 and $0.05 billion for 2023; and (3) other various support activities (e.g., purchase of tools, computer systems/software, maintenance/ upgrades of office facilities, and responding to customer requests). For 2019-2022, these costs are $0.52 billion, and $0.17 billion for 2023.

Q. Please provide details for capital costs driven by Regulatory Compliance.

A. This remaining major driver category, accounting for approximately $272.5 million in 2019-2022 and $72.9 million for 2023, includes costs associated with complying with various regulatory mandates, rules and regulations previously discussed.

B. T&D O&M EXPENSES

Q. What are FPL's and Gulf's combined T&D O&M expenses for 2022 Test Year and 2023 Subsequent Year?

A. FPL and Gulf have forecasted combined T&D O&M expenses of $289.7 million and $295.4 million for the 2022 Test Year and 2023 Subsequent Year, respectively. These

forecasts include a portion of T&D O&M expenses related to SPP programs for 2022 and 2023 of approximately $83 million each year. FPL witness Fuentes is requesting a Company adjustment to move the recovery of all SPP O&M expenses from base rates to the SPPCRC.

Q. How do T&D O&M expenses compare to typical benchmarks utilized by the FPSC for evaluating the reasonableness of O&M expenses?

A. Total T&D 2022 Test Year and 2023 Subsequent Year O&M expenses compare favorably to the benchmarks typically used by the Commission to evaluate the reasonableness of O&M expenses (e.g., MFR C-8 Consolidated, Details of Changes in Expenses and MFR C-41 Consolidated, O&M Benchmark Variance by Function). For example, 2022 Test Year and 2023 Subsequent Year T&D O&M expenses are significantly below the FPSC O&M benchmark as calculated by FPL witness Bores in MFR C-41, which are approximately $153.6 million and $158.4 million for 2022 and 2023, respectively.

Q. Is there other information available indicating that FPL's O&M expenses are reasonable?

A. Yes. As contained in FPL witness Reed's testimony, benchmarking of T&D O&M expenses demonstrates that FPL has "shown excellence in controlling its Distribution O&M expenses" and "performed well in controlling Transmission O&M expenses."

Q. Are FPL's T&D forecast for capital costs and O&M expenses reasonable?

A. Yes. For the reasons outlined in detail in my testimony and exhibits, FPL's 2022 test year and 2023 subsequent year T&D forecast for capital costs and O&M expenses are reasonable and reflect our intentions for continued superior performance. As

previously discussed, Power Delivery has the leadership and performance track record for managing and sustaining excellent T&D system performance.

Q. Does this conclude your direct testimony?

A. Yes.

(Whereupon, prefiled rebuttal testimony of Michael Spoor was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

REBUTTAL TESTIMONY OF MICHAEL SPOOR

DOCKET NO. 20210015-EI

JULY 14, 2021

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Michael Spoor, and my business address is One Energy Place, Pensacola, Florida, 32520.

Q. Did you previously submit direct testimony in this proceeding?

A. Yes.

Q. Are you sponsoring or co-sponsoring any rebuttal exhibits in this case?

A. Yes. I am sponsoring the following exhibit:

- MS-7 – T&D Property Held for Future Use

I am co-sponsoring the following exhibit:

- LF-10 – FPL's Notice of Identified Adjustments filed May 7, 2021 and Witness Sponsorship, filed with the rebuttal testimony of FPL witness Fuentes.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimony submitted by CLEO Institute and Vote Solar ("CLEO-Vote Solar") witness Curt Volkmann. Additionally, I will address Office of Public Counsel ("OPC") witness Ralph Smith's comments concerning adjustments for vegetation management and Storm Protection Plan ("SPP") costs, and comments regarding Property Held for Future Use ("PHFU").

Q. Please summarize your rebuttal testimony.

A. Like my direct testimony, my rebuttal testimony provides support and context for FPL's proposed capital expenditures focusing on growth and reliability/grid modernization, which are necessary to meet our customer needs. I will explain why

these expenditures are necessary, reasonable, and prudent to maintain the current excellent service reliability that we provide and to meet our obligation to serve new and existing customer load. I will also describe how these proposed capital expenditures are consistent with historical reliability and growth initiatives, which the Florida Public Service Commission ("Commission") has previously approved. Finally, I will explain why witness Volkmann's recommendations are unnecessary, not in the best interests of customers, and should be rejected.

II. FPL'S PROPOSED T&D CAPITAL EXPENDITURES FOR RELIABILITY/GRID MODERNIZATION ARE REASONABLE

Q. Starting on page 9, witness Volkmann contends that FPL's proposed capital for reliability/grid modernization is not supported in its filing. Do you agree with this assessment?

A. No. Section VI of my direct testimony describes FPL's Transmission and Distribution ("T&D") reliability programs that are critical for safe and reliable operation of the system. Starting on page 18 of my direct testimony, I provide specific examples of our reliability initiatives. I also note that as part of the discovery process, additional program and initiative details were provided, which included a further breakdown of the capital expenditures by categories and subcategories.

Q. Can you provide an overview of FPL's T&D Grid and an overall breakdown of the T&D reliability/grid modernization investments?

A. Yes, FPL currently serves more than 5.6 million customer accounts, or more than half of our state's population across 43 counties with 77,000 miles of distribution lines and

9,000 miles of high-voltage transmission lines. Approximately 65% of the reliability/grid modernization investments are transmission projects which are necessary and critical to the continued reliable performance of the overall electric system in Florida for now and in the future. The remaining 35% is associated with the distribution system required to support and maintain our current system reliability.

Q. Can you describe the component breakdown of the transmission programs included in the reliability/grid modernization investments?

A. Yes, the following transmission programs are included in FPL's reliability/grid modernization investments:

- **Targeted assessment, maintenance, and prevention** – This program is based on facility and system assessments, targeted maintenance, prevention through prediction, and prevention of reoccurrence. These programs utilize diagnostic tools to assess equipment and facility conditions to develop a plan for maintenance and replacement for the reliable operation of the transmission and substation assets in a cost-effective manner.
- **Major Projects Reliability** – This category contains a large part of the transmission reliability projects as previously mentioned in my direct testimony. The largest of these projects is the 500 kV rebuild program that began in 2019 to replace the transmission structures associated with these critical lines as they reach end of useful life. The 500 kV system is the backbone of the electric grid in Florida. FPL had been utilizing a condition-based replacement program and had been replacing structures associated with the system since the late 1990s as they were identified during the annual inspection program. As the number of structures

requiring replacement began to increase starting around 2012, it was evident that the system would need a more proactive and focused approach moving forward, and in 2019 the current rebuild project began with a scheduled completion in 2025.

- **North Florida Resiliency Connection ("NFRC")** – The final construction phase and completion of the NFRC, a new 176-mile, 161 kV transmission line is currently being constructed to enhance the existing electrical connection between the FPL and Gulf systems, and is expected to be completed in mid-2022. FPL witness Sim presents the analysis that demonstrates the NFRC's economic benefits.

Q. Can you describe the component breakdown of the distribution programs included in the reliability/grid modernization investments?

A. Yes, the following distribution programs are included in FPL's reliability/grid modernization investments:

- **Smart Grid** – The program includes the installation of automated devices, such as Automated Feeder Switches ("AFS"), Automated Lateral Switches ("ALS"), and Automated Transformer Switches ("ATS") to detect and prevent outages and reduce the number of customers impacted when an outage occurs. These devices also reduce outage times through the use of communication protocols that either communicate with other devices or the Distribution Control Center ("DCC") through the Supervisory Control and Data Acquisition System ("SCADA"). This equipment allows an outage to be automatically resolved within seconds without human intervention instead of requiring the deployment of a line crew to investigate and subsequently resolve the issue, sometimes at the peak of rush hour. FPL also installs Fault Current Indicators ("FCIs") which provide real-time fault information

to our control center, allowing us to better dispatch our crews when a fault cannot be automatically resolved by assisting in locating the fault and ultimately reducing restoration time. FPL has been implementing this program and these initiatives for over a decade and they are a proven component of the exceptional reliability our customers experience today.

- **Underground Inspection and Repair Program** – This program provides several layers of inspection of underground equipment such as switch cabinets, vaults, manholes, and pad-mount transformers which are focused on reducing failures, customer outages, and maintaining a safe and reliable electric grid.
- **Cable Rehabilitation Program** – This program was created to address the poor reliability performance of certain sections of underground feeders and laterals. The program mainly replaces direct buried feeder cables that have reached their end of useful life.
- **Priority Feeder Program** – This program involves identifying the worst-performing feeders and addresses reliability issues to improve performance. One specific aspect of this program is to address the worst-performing feeders as identified in the Reliability Report filed annually with the Commission.
- **Submarine Cable Program** – This program monitors the performance of over 670 submarine feeder sections for proactive replacement as these cables reach their end of useful life. The program uses failure information to replace critical and high-impact submarine cable sections, which take longer to execute due to environmental permits and requirements.

- **Handhole/Pad-mount Transformers** – This program inspects handholes and pad-mount transformers to ensure that they are safe and secure, replacing them as necessary to avoid unplanned outages and increase reliability.
- **Distribution Reactive Maintenance** – This program involves the repair of issues identified on feeders and laterals that have experienced recent sustained or momentary outages.
- **Distribution Other Maintenance** – Replacement of small conductor circuits that experience multiple outages, replacement of reclosers, capacitors, network components, and other equipment that impact customers' reliability.

Q. Based on the descriptions of these programs and investments, do you believe that witness Volkmann's concerns regarding these programs is reasonable?

A. No, I do not. The work that witness Volkmann takes issue with is not unusual in any way. Rather, this work is fundamental, core T&D work that FPL has done for years. I also note that witness Volkmann was the only intervenor witness that even questioned the validity of these core electric service activities.

Q. What is the test-year capital investment for reliability/grid modernization that FPL is proposing and how does that compare to historical spending within Power Delivery?

A. The proposed capital investment for 2022 associated with reliability/grid modernization, as outlined in my direct testimony on page 37, is $1.12 billion. This level of investment is consistent with recent historical spending trends as described in my direct testimony.

Q. On page 17 of his testimony, witness Volkmann suggests that FPL should not perform any of its T&D work unless and until it conducts a benefit/cost analysis for each component of that work. Do you agree with this suggestion?

A. No. Witness Volkmann uses the Lawrence Berkeley National Lab's Interruption Cost Estimate ("ICE") Calculator to estimate the economic value to customers from improved reliability and implies that work should not be done unless it is mathematically justified by this calculator. Although witness Volkmann distances himself from the validity of the ICE calculator's results, he nonetheless attached them as exhibits to his testimony in an apparent effort to suggest that FPL's T&D spends are not cost-effective. While the ICE model may provide data points for some purposes, even witness Volkmann concedes at page 16, line 14 of his testimony that "the ICE Calculator is an imperfect tool." Importantly, the ICE calculator results fail to capture the true benefits of these programs and investments as experienced by the FPL customers when it comes to reliability. When evaluating the categories of programs outlined above, it is clear that the vast majority of the outlined capital expenditures are for maintenance of the existing large infrastructure. These investments are critical to maintain the present level of outstanding reliability that FPL provides our customers. Many of these long-term capital investments are necessary to maintain the system and will pay dividends for decades to come. On page 17 of his testimony, witness Volkmann attempts to tie these investments to a strict 2-4% annual improvement in reliability. The application of such a test to these programs and investments is not valid and clearly misplaced because the majority of the proposed expenditures, as outlined, are based on continued deployment of historical investment in the infrastructure

necessary to maintain present reliability standards. Stated simply, the work that we need to do to maintain the excellent performance of our system and to keep the lights on is what I call "just do it" work that the Company should do as a matter of course.

Practical operational experience, not an academic or economic calculation, dictates that you do the work that you need to do to keep your system maintained and functioning at its current excellent level. Even witness Volkmann recognized this concept. On his Exhibit CV-7 at page 7, it states that "In many instances utility-facing grid modernization investments are required either for safety, reliability, or policy requirements. In such cases, it may not be necessary or worth the effort to monetize the benefits." Thus, for the reasons that I've discussed above, witness Volkmann's suggestion that further analysis is needed before this work is performed should be rejected by the Commission.

Q. Are these reliability/grid modernization capital investments limited to short-term benefits or do they provide long-term benefits?

A. Reliability/grid modernization programs such as the 500kV rebuild program provide long-term benefits through the replacement of transmission structures that are nearing their end of useful life. Replacing structures with structures that meet the current National Electric Safety Code standards will provide for the long-term reliability and resiliency of the electric grid in Florida.

Q. Can FPL maintain its present level of reliability without continued reliability/grid modernization capital investments?

A. No. As acknowledged in witness Volkmann's testimony, "FPL's reliability is very

good compared to other utilities." This admission only confirms that FPL's capital investments in reliability have been successful. These continued investments are necessary to maintain the current exceptional level of reliability and to continue to make improvements over time.

Q. Do geographic and weather-related challenges highlight the importance of continued investments in reliability/grid modernization?

A. Yes. Despite geographic and weather-related challenges, which I explain in detail on Page 10, Line 17 through Page 11, Line 10 of my direct testimony, FPL's reliability has been the best for 15 consecutive years amongst the Florida investor-owned utilities ("IOU"). Our continued investments in reliability/grid modernization are necessary to continue providing reliable electric service to our customers, the majority of whom live within 20 miles of the approximately 610 miles of coastline that FPL serves. As we Floridians know, our state is more susceptible to tropical storms/hurricanes than any other state and we often face significant seasonal weather in the form of thunderstorms and lightning strikes.

Q. On page 15 of his testimony, witness Volkmann contends that FPL's reliability/grid modernization investments will only yield four percent annual improvements for SAIDI or approximately six minutes of cumulative reduction of outage minutes for FPL by 2023. Is this an appropriate way to assess the reasonableness of FPL's proposed investments?

A. No. First, witness Volkmann incorrectly attempts to portray the totality of FPL's proposed reliability/grid modernization investments in this matter as only providing six minutes of cumulative improvements to SAIDI for our customers by 2023. In doing

so, witness Volkmann ignores the substantial investments that FPL has made and must continue to make to maintain its current level of reliability, notwithstanding any further improvements. These approved historical investments have improved reliability greatly for our customers since 2016, and will continue to do so, not just a mere six minutes as witness Volkmann implies. As discussed in my direct testimony, in 2020, FPL was the first IOU in Florida to achieve T&D SAIDI of less than 50 minutes as reported to the Commission. Witness Volkmann notably acknowledges on page 10 of his testimony that "FPL-Gulf's day-to-day reliability is very good compared to other utilities." Considering the current high level of reliability standard set by FPL and Gulf with our best-ever reliability years in 2019 and 2020, it will require continued investment and focus by FPL to just maintain that superior level of service for our customers.

Q. On page 15, witness Volkmann calculates that FPL's proposed capital spend costs approximately $600-$900 million per minute reduced customer outage time. Is this accurate?

A. No. Witness Volkmann's erroneous calculation again ignores the fact that the overwhelming majority of costs for the work detailed above is to maintain FPL's current reliability apart from any improvements to it. In addition, these capital investments do not have a simple 1:1 static correlation to costs as witness Volkmann implies, given that a vast majority of these capital investments will continue to benefit the T&D system and FPL's customers over the life of these investments.

Q. Do you agree with witness Volkmann's attempt to minimize the additional impact of the reliability/grid modernization investments, as only providing "six minutes" of improvement?

A. No, I do not. As a part of FPL's culture of continuous improvement, our goal is to not only maintain our present level of reliability, but to strive for additional improvements to support our customers by reducing outages, reducing the number of customers impacted by an outage, and when those customers do experience an outage, ensuring that the outage duration is extremely short. Notwithstanding witness Volkmann's errors that I previously discussed, his general suggestion that a four percent improvement in system reliability is not substantially impactful to customers is misplaced. It is important to note that 1 minute of SAIDI improvement at the system level equates to 5.6 million minutes of reduced outage time for our customers annually. For FPL to improve reliability by four percent annually at the system level by 2023, it would require reducing customer minutes of interruption across the whole system by an additional 11 million minutes in 2021, 22 million minutes in 2022, and approximately 34 million minutes in 2023, a cumulative total of an additional 67 million minutes of reduced outage times over the next three years while maintaining FPL's existing superior service. Accordingly, when speaking about improvements in FPL's system reliability, one must keep in mind that our efforts result in the avoidance of millions of minutes of interruptions for our general body of customers and not just six minutes as witness Volkmann contends.

Q. CLEO-Vote Solar witness Volkmann on Page 22-23 of his testimony states FPL should "increase transparency into the Company's capital expenditures" and provide metrics shown on his Exhibit CV-4. How does this recommended capital expenditure framework compare to what FPL already provides to the Commission?

A. The Commission already requires much more information than that proposed by witness Volkmann. This information is required of FPL and the other IOUs as part of the annual Reliability Report and the annual Status Report on SPP Programs and Projects. Both of these highly detailed annual reports (approximately 2,000 pages combined) are reviewed by the Commission and the storm protection activities and related costs and rate impact information from these reports are captured by the Commission and reported to Florida's Governor and the State Legislature. These required reports to the Commission, as well as the Commission's annual report to the Governor and Legislature, underscore the importance of improving reliability and system resiliency as a priority in Florida.

Q. Does FPL provide feeder level reliability and performance information to the Commission?

A. Yes, feeder level detailed information on performance and reliability are provided to the Commission annually as a part of the Reliability Report. Per Commission rules, the report includes feeder-specific data which provides information such as feeder number, the number of customers on the feeder, number and type of laterals (OH, UG, Hybrid), feeder miles, customer interruptions per feeder, and feeder load information in MVA. The Commission Staff's comprehensive review of our annual Reliability

Report includes discovery associated with FPL's performance, programs, and initiatives to improve reliability, specific outage data and system corrections, and plans to ensure improved reliability performance on certain feeders in the future. Our past performance and planned improvements are a result of our ongoing reliability/grid modernization investments.

Q. Do you have any final thoughts regarding FPL's reliability/grid modernization investments?

A. Yes, these reliability/grid modernization investments are consistent with historic levels of investments and are necessary and required to maintain our T&D system to continue to provide a high level of reliable and safe electric service.

III. FPL'S PROPOSED CAPITAL EXPENDITURES FOR GROWTH ARE REASONABLE

Q. On page 23, witness Volkmann asserts that FPL's proposed capital expenditures for growth are unsupported in FPL's initial filing. Do you agree with his statements?

A. No. Section VIII of my direct testimony provides details on FPL's proposed capital investments to support growth and expansion driven by our customers across the service area. FPL has a mandated obligation to serve our customers. As described in my direct testimony, Florida is the second fastest growing state in the nation and these investments are necessary to provide service to approximately 425,000 new service accounts by 2023 and to support new and existing customer load growth and expansion.

Forecasts are based on and consistent with recent spending trends associated with a growing customer base.

Q. Can you provide a breakdown of the programs included in the growth investments?

A. Yes**,** the following T&D programs are included in FPL's growth investments:

- **New Service Accounts** – Costs associated with installing new distribution facilities necessary to serve new customers. Facilities include primary distribution, secondary distribution, and meters to serve residential, commercial, and industrial customers.
- **T&D System Upgrades -** Projects designed for transmission expansion and to inject additional capacity into distribution areas in support of existing and new customer load growth. These projects may require installation of new feeders and/or other equipment upgrades or could be as simple as installing a single service to a home or business.
- **Large Major Construction –** Costs associated with major projects installing new distribution and transmission infrastructure necessary to serve new large customers/load (e.g. large office buildings, commercial/industrial complexes, large condominium buildings). Many of these projects are multi-year. Page 26 of my direct testimony provides examples of the major construction projects such as the Florida Space Coast and the Baptist Hospital projects that are categorized in this group.

Q. On page 25, line 11, witness Volkmann recommends that the Commission require FPL to establish a capital performance framework which includes growth capital expenditures. Is that necessary?

A. No. The capital performance framework as suggested by witness Volkmann is neither required nor necessary when evaluating growth expenditures to meet our obligation to serve. As stated earlier, capital investments in growth are necessary to provide electric service to new service accounts and for new and existing customer load growth. Florida Statutes section 366.03 states that "Each public utility shall furnish to each person applying therefore reasonably sufficient, adequate, and efficient service upon terms as required by the commission." Further, FPSC Rule 25-6.046, F.A.C. requires FPL to maintain standard nominal voltages to ensure equal and adequate service to all customers. Providing service to new customers and for new customer load growth should not be subject to witness Volkmann's "capital investment framework" and his apparent suggestion that FPL should deploy this framework to decide whether or not FPL should serve new customers is not consistent with our obligation to serve.

IV. RATE CASE ADJUSTMENT FOR T&D PROGRAMS

Q. On pages 63-64, OPC witness Smith states that the Company should explain why O&M expenses pertaining to the Feeder Hardening and Pole Inspection Distribution programs reflected in its SPP were not included as part of FPL's proposed Company adjustment to move costs from base rates to the SPP cost recovery clause in the 2022 Test Year. Can you please explain why they were not included?

A. Yes. As correctly explained by OPC witness Smith, FPL's Company adjustment to move recovery of SPP O&M from base rates to the SPP cost recovery clause is approximately $3 million lower than the total amount of O&M reflected in its SPP filing in 2020, which is comprised of approximately $2 million within the current Gulf SPP Feeder Hardening Program and $800 thousand associated with the current Gulf SPP Pole Inspection Distribution Program. FPL witness Fuentes can explain in greater detail FPL's proposed Company adjustments, but in summary, the $2 million related to the SPP Feeder Hardening Program was forecasted as O&M expenses in the SPP filing but not included in FPL's rate case forecast. This is due to Gulf Power receiving a limited duration waiver from the Federal Energy Regulatory Commission ("FERC") in August 2020.[1] to permit capitalization of costs to transfer existing conductors and other attachment assets to new storm hardened distribution poles as part of Gulf Power's Feeder Hardening program. Therefore, since the $2 million was not reflected as O&M expense, a Company adjustment was not required to move the costs from base rates to clause recovery.

As noted in FPL's Notice of Identified Adjustments filed on May 7, 2021, the forecast for the SPP Pole Inspection Distribution Program O&M expenses was understated by approximately $800 thousand in each of the forecasted periods. Because the rate case forecast did not include these expenses, a Company adjustment was not required to move the costs from base rates to clause recovery.

[1] Addressed in FPL witness Jarro's Direct Testimony in Docket No. 20210010-EI.

Q. On pages 63-64 of his testimony, OPC witness Smith states the Company should explain a perceived discrepancy pertaining to the amount of Distribution Vegetation Management O&M expenses forecasted for 2022 between two discovery responses provided by FPL. Is this a correct assertion?

A. No. OPC witness Smith asserts that there may be a discrepancy in the $64.9 million of Distribution Vegetation Management O&M expenses in 2022 provided in FPL's response to OPC's First Set of Interrogatories, No 79 Supplemental when compared to $62.1 million shown on FPL Bates Stamp No. 025813 provided in response to OPC's First Set of Production of Documents No. 35 Supplemental. However, there is no discrepancy and his assertion is incorrect. The referenced $62.1 million represents the total amount of SPP O&M forecasted in FERC account 593 – Maintenance of Overhead Lines which contains only a portion of Distribution Vegetation Management along with O&M for other non-vegetation SPP programs. In contrast, the $64.9 million of SPP Distribution Vegetation Management expenses is comprised of forecasted amounts related to Operation Supervision and Engineering costs of $4.7 million, Maintenance of Overhead Lines of $60.1 million and Employee Pension and Workers Compensation of $0.1 million. Instead of aggregating the cost horizontally by row on FPL Bates Stamp No. 025813, the expenses associated with Distribution Vegetation Management should have been added vertically by column to capture overhead costs (e.g., Supervision & Engineering, Employee Pension, Payroll Taxes). In summary, the $64.9 million is inclusive of FPL's and Gulf Power's aggregated[2] Distribution Vegetation Management costs in 2022, while the $62.1 million represents Maintenance of

[2] Consistent with FPL and Gulf Power's SPP, both of which were approved by the Commission in Docket Nos. 20200071-EI and 20200070-EI, respectively.

Overhead Line costs for multiple SPP programs. Note, the total amount of $64.9 million was included in FPL's Company adjustment to move the recovery of all SPP O&M expenses from base rates to the SPP cost recovery clause as described in the direct testimony of FPL witness Fuentes.

V. PROPERTY HELD FOR FUTURE USE

Q. On Page 51, Lines 1-3, OPC witness Smith raises concerns regarding in-service dates related to T&DPHFU labeled as "to be determined." Are his concerns valid?

A. No. OPC witness Smith's assertion is unsupported and should be dismissed. FPL provided expected in-service dates through 2028 for all T&D properties included in PHFU in its supplemental response to OPC's First Request for Production of Documents, No. 36. For ease of references, please refer to Exhibit MS-7, which presents the T&D properties included in PHFU and their expected in-service dates that FPL included in the referenced discovery response.

Q. Does this conclude your rebuttal testimony?

A. Yes.

(Whereupon, prefiled direct testimony of Thomas Broad was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF THOMAS BROAD

DOCKET NO. 20210015-EI

MARCH 12, 2021

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Thomas Broad, and my business address is Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida, 33408.

Q. By whom are you employed, and what is your position?

A. I am employed by NextEra Energy as the Vice President of Power Generation Operations and Pipelines in the Power Generation Division ("PGD") Business Unit.

Q. Please describe your duties and responsibilities in that position.

A. I am responsible for the operations and maintenance of all of the Company's fossil/solar power plant generation across Florida, including traditional fossil fuel-fired steam boilers, combined cycle ("CC"), aero-derivative and large frame simple cycle combustion turbine ("CT"), and solar / battery technologies.

Q. Please describe your educational background and professional experience.

A. I earned a Bachelor of Science Degree in Engineering - Marine from Maine Maritime Academy and a Master of Business Administration from Nova Southeastern University. I also am a Certified Six Sigma Black Belt. Overall, I have more than three decades of Power Generation related experience. My extensive professional background involves technical, managerial, and commercial experience in progressively more demanding assignments.

I joined Florida Power & Light in 1985 on the Marketing Services Team. I have since served as Vice President - Central Maintenance, where I led the safe and cost-effective execution of major maintenance activities throughout the U.S. and Canada. I also served as Vice President - Engineering & Construction, where I was responsible for leading all engineering and construction activities for NextEra Energy's generation fleet. Beginning 2018, I then served as Vice President – Solar, Battery Storage, and Pipelines for NextEra Energy projects across the United States, Canada and Spain.

I am currently Vice President of PGD's Fossil/Solar Operations with responsibility for over 600 employees and 69 electrical generating units with a combined non-nuclear production capacity of approximately 25,000 MW in 2020. FPL's generating fleet ("fossil/solar") is the largest and most fuel-efficient utility fleet in the country. With FPL and Gulf utilities merging, this capacity increases another 2,400 MW totaling more than 27,000 MW.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- TB-1 Consolidated MFRs Sponsored or Co-sponsored by Thomas Broad
- TB-2 Supplemental FPL and Gulf Standalone Information in MFR Format Sponsored or Co-sponsored by Thomas Broad
- TB-3 FPL Fossil/Solar Fleet MW Capability and Technology Changes
- TB-4 FPL Fleet Performance Improvements
- TB-5 FPL 15 Year NFOM, NHR & EFOR Performance Comparison

- TB-6 Pg. 1 of 2 FPL Fossil/Solar Fleet Heat Rate Comparison
- TB-6 Pg. 2 of 2 Cumulative Benefits from FPL's Modernized Fleet
- TB-7 FPL's/Gulf's Fleet Level O&M, Heat Rate and EFOR Performance Comparisons
- TB-8 FPL's/Gulf's CC & PV Plant Level O&M Performance Comparisons
- TB-9 FPL's/Gulf's Total O&M and CAPEX Maintenance Expenditure, Heat Rate & EFOR Comparisons

Q. Are you sponsoring or co-sponsoring any consolidated Minimum Filing Requirements ("MFRs") in this case?

A. Yes. Exhibit TB-1 lists the consolidated MFRs that I am sponsoring or co-sponsoring.

Q. Are you sponsoring or co-sponsoring any schedules in "Supplement 1 – FPL Standalone Information in MFR Format" and "Supplement 2 – Gulf Standalone Information in MFR Format"?

A. Yes. Exhibit TB-2 lists the supplemental FPL and Gulf standalone information in MFR format that I am sponsoring or co-sponsoring.

Q. How will you refer to FPL and Gulf when discussing them in testimony?

A. When discussing operations or time periods prior to January 1, 2019 (when Gulf was acquired by FPL's parent company, NextEra Energy, Inc.), "FPL" and "Gulf" will refer to their pre-acquisition status, when they were legally and operationally separate companies. For operations or time periods between January 1, 2019 and January 1, 2022, "FPL" and "Gulf" will refer to their status as separate ratemaking entities, recognizing that they were merged legally on January 1, 2021 and

consolidation proceeded throughout this period. Finally, operations or time periods after January 1, 2022 are referred to as FPL only because Gulf will be consolidated into FPL. Therefore, unless otherwise noted, my testimony addresses requests for the consolidated company.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to support the reasonableness of the fossil/solar generating fleet non-fuel operating and maintenance expenses ("O&M") and capital expenditures ("CAPEX") in providing service to customers. My testimony addresses two major areas: (1) fossil/solar generating fleet performance; and (2) fossil/solar generating fleet non-fuel O&M and maintenance/reliability CAPEX for the integrated FPL fleet. I convey that FPL aggressively manages its operating costs and remains one of the most cost-efficient generating utilities in the nation. At the same time, FPL has lowered its operating costs and has improved its overall performance since the last base rate proceeding. I further demonstrate that the FPL and Gulf fleets have provided and, with appropriate rate adjustments covering projected costs, the combined FPL fleet will continue to provide customers with reliable and even more efficient and cost-effective service.

Q. Please summarize your testimony.

A. Over the last thirty years, FPL has continuously transformed its fossil/solar generating fleet and has substantially improved its operating performance across key indicators integral to the reliable and cost-efficient generation of electricity for customers (as shown on Exhibits TB-3 and TB-4). Also, among large electric utility fossil fleets over the last 15 years (as shown on Exhibit TB-5), FPL's

performance has been best-in-class in non-fuel O&M and heat rate, and essentially top decile or better in Equivalent Forced Outage Rate ("EFOR"). FPL's generating fleet cost reductions and performance improvements provide substantial benefits to customers. These achievements, from 1990 through 2020, included:

- reducing heat rate (fuel use) by 33 percent
- reducing EFOR by 71 percent
- reducing air emission rates by 45 percent for CO_2, 98 percent for NOx, and nearly 100 percent for SO_2
- reducing total non-fuel O&M cost per kilowatt ("kW") by 49 percent, despite increases in the Consumer Price Index ("CPI") over that timeframe.

These improvements have produced tremendous value for FPL customers. Since 2001, heat rate improvements have saved approximately $11 billion cumulatively in fuel cost savings for customers. In 2020 alone, FPL saved more than $1 billion in combined non-fuel O&M expenses and fuel costs improvements compared to 2001. These one-year savings are illustrative of the significant recurring value that customers are experiencing each year. Our excellent fleet performance has also frequently been top decile or best-in-class.

The doubling of FPL's fossil/solar generating fleet capacity over the last three decades to serve customers' electricity needs along with the transformation of the Company's generating technology from conventional steam combustion boiler to

other cleaner, more efficient combined cycle ("CC") and free-fuel solar photovoltaic ("PV") units are key drivers of FPL's operating improvements (as reflected in Exhibits TB-3 through TB-6). FPL's outstanding performance improvements provide customers with cleaner, more cost-effective and fuel-efficient generation. Maintenance/reliability CAPEX and non-fuel O&M funding are essential to providing these performance improvement benefits, and PGD's prudent management of these funds plays a significant role in achieving our exceptional generating fleet performance. Furthermore, the integration of FPL and Gulf into one utility is allowing us to take full advantage of our demonstrated strengths and bring further benefits to customers.

II. FOSSIL/SOLAR GENERATING FLEET PERFORMANCE

Q. What indicators does FPL use to measure the operating performance of its fleet of generating units?

A. FPL uses a number of indicators to measure the performance of its fleet. These indicators include, among others shown on Exhibit TB-4: heat rate to measure the amount of fuel used to produce a unit of electricity; EFOR to measure reliability; and non-fuel O&M in dollars per installed kW of capacity ("$/kW") to measure resource management cost effectiveness. As shown in the exhibits to my testimony, the indicators for FPL's generating fleet performance compare very favorably with the energy industry as well as with FPL's long-term historical performance.

Q. Please describe the indicator FPL uses to measure generating efficiency.

A. The key indicator of generating efficiency in converting fuel to electricity is heat rate, measuring the amount of fuel required to generate a kilowatt hour ("kWh") of power. Heat rate is expressed in British Thermal Units per kilowatt-hour ("Btu/kWh") and calculated by dividing the total Btu heat input (from fuel burned) by the net kWh of electricity produced by those units. Significantly, the lower the heat rate, the less fuel is required to generate the same amount of electricity, and the greater the customer savings in fuel costs.

Q. What actions have been taken to achieve and maintain generating fleet heat rate performance improvements to date?

A. As shown in Exhibit TB-6-Pg.1, system heat rate performance gains have been achieved by constructing new, highly efficient gas-fired combined cycle units, and by converting older power plants into modern combined cycle units. These new units, along with upgrading our turbine and combustion technology, provide significant fuel cost savings to customers and reduced air emissions while utilizing existing sites. Integrating new, fuel-free solar plants into the generating fleet is further improving performance by generating electricity without fuel use.

Additionally, maintaining power plant operating performance is essential because generating equipment wears and deteriorates over time, necessitating efforts to minimize heat rate degradation and restore lost generating unit performance. Sustaining the operational performance of this growing fleet of fuel-efficient facilities requires ongoing CAPEX to support this equipment maintenance.

Q. Has the generating efficiency of FPL's fleet improved over time?

A. Yes. FPL's long term generating efficiency improvement is included in Exhibit TB-4, showing a generating fleet heat rate reduction from 10,214 Btu/kWh to 6,878 Btu/kWh, representing a 33 percent efficiency improvement from 1990 through 2020. As further highlighted on Exhibit TB-6-Pg.1, an improvement in heat rate (29 percent) occurred between 2001 and 2020, representing approximately $11 billion in cumulative fuel cost savings for customers over that timeframe, and more than half a billion dollars in 2020 alone. Since 2017, the fleet heat rate has improved by 8 percent. Although fuel prices may vary in the future, FPL customers will always have lower relative fuel charges because of FPL's generating efficiency improvements. Additionally, Exhibit TB-7 reflects that both FPL and Gulf have actual and projected heat rate trend improvements from 2018, Gulf's pre-acquisition year, into the future as both fleets are integrated, further modernized, and improved.

Q. How does FPL's generating fleet heat rate performance compare to that of others in the industry?

A. As shown on Exhibit TB-6-Pg. 1, FPL's generating fleet heat rate compares extremely favorably to the industry. Between 2001 and 2019, the industry average heat rate improved less than ten percent (from 10,472 Btu/kWh to 9,476 Btu/kWh). In contrast, FPL's heat rate improved more than 25 percent (from 9,635 Btu/kWh to 7,070 Btu/kWh) over the same period. In fact, FPL's fleet heat rate improved 5 percent in just two years' time from 2017 to 2019 (roughly three times the industry improvement over this period) due to several key actions: (a) retiring

2,800 MWs of less-efficient coal and oil/gas burning fossil steam capacity; (b) adding approximately 1,720 MWs of highly-efficient combined cycle capacity; and (c) adding 900 MWs of solar plants. FPL's generating fleet heat rate performance also has been best-in-class every year over the last 15 years as shown on Exhibit TB-5.

Also, as shown on Exhibit TB-7, FPL's / Gulf's respective and combined fleet heat rates are much better than the average industry performance. Heat rates are expected to continue improving as the combined FPL / Gulf fleet is further transformed to more-efficient modernized technology.

Q. Please explain how a modernized generating fleet using combined cycle and solar units benefits customers.

A. FPL's generating plant technology transformation to combined cycle and solar powered units improves overall fleet heat rate performance, benefiting customers in three important ways: avoiding fuel cost, avoiding oil use, and avoiding air emissions. As shown on Exhibit TB-6-Pg. 2 for example, from 2001 through 2020, FPL's cumulative 29 percent heat rate improvement contributed benefits, as follows:

- ~ $11 billion of fuel costs avoided
- ~ 600 million barrels of oil burn avoided
- ~ 165 million tons of CO_2 emissions avoided

In simple terms, a 29 percent heat rate improvement in FPL's generating fleet since 2001 represents more than half a billion dollars in fuel cost savings in 2020 alone.

Since 1990, FPL has reduced its fossil/solar generating fleet CO_2 emission rate by 45 percent and reduced NO_x and SO_2 emission rates by 98 and nearly 100 percent, respectively (as shown on Exhibit TB-4). This impressive achievement has resulted in a reduced rate of greenhouse gas and other air emissions, thereby contributing to a cleaner environment. Additionally, our modern, state-of-the-art power plants require significantly fewer people than the older power plants they replaced, also providing non-fuel O&M cost savings for customers. FPL's fleet fuel cost savings and emission benefits from efficiency improvements will continue to grow as new and modernized units are placed in service. The planned addition of approximately 2,900 MW of highly efficient combined cycle / solar / battery storage generation from 2021 through 2022, coupled with the retirement of nearly 2,300 MW of coal and oil/gas burning fossil steam units, further exemplify the Company's commitment both to fuel cost reduction and environmental sustainability.

Q. Please describe the indicator used to measure plant reliability.

A. EFOR represents generating plant reliability and is a measure of a unit's inability to provide electricity when dispatched to operate. EFOR is reported as the percentage of hours when a generating unit could not deliver electricity relative to all the hours during which that unit was called upon to operate. FPL and Gulf continually strive for, and have achieved, low generating fleet EFOR. This results in greater availability of efficient generating capacity for customers.

Q. Has the EFOR of the generating fleet also improved over time?

A. Yes. As shown on Exhibit TB-4, the EFOR of FPL's generating fleet has been reduced more than 71 percent (from 1990 through 2020), and as shown on Exhibit TB-7, both FPL and Gulf's EFORs are exceptionally low, signifying highly reliable generating fleets.

Q. How does the EFOR of FPL's and Gulf's generating fleets compare to the industry?

A. Among large electric utility fossil fleets over the last 15 years, FPL has essentially been a top decile or better EFOR performer as shown on Exhibit TB-5. Also, both FPL's and Gulf's generating fleet EFOR performance, currently averaging 0.8 percent, have significantly outperformed the higher latest industry average of 8.4 percent as shown on Exhibit TB-7. Both fleets' EFORs are also considered best-in-class performance.

Q. How does excellent generating fleet EFOR performance benefit customers?

A. Excellent fleet EFOR performance represents better reliability and provides more opportunity for highly efficient capacity to operate and minimize customer fuel costs and air emissions.

Q. Please summarize the operating performance of FPL's generating fleet.

A. As discussed previously, the transformation of FPL's generating fleet since 1990 (referenced on Exhibit TB-3) has enabled significant performance improvement across key indicators (as shown on Exhibit TB-4) integral to generating electricity for our customers. These performance improvements include:

- reducing heat rate (fuel use) by 33 percent

- reducing EFOR by 71 percent
- reducing air emission rates by 45 percent for CO_2, 98 percent for NOx and nearly 100 percent for SO_2
- reducing total non-fuel O&M cost per kW by 49 percent (see Section III below)

In brief, FPL's fossil generating fleet has industry-leading performance, either top decile or best-in-class. In fact, as shown on Exhibit TB-5, among large electric utility fossil fleets over the last 15 years, FPL's performance has been best-in-class in non-fuel O&M and heat rate, and essentially top decile or better in EFOR. This superior performance in these metrics is expected to continue, or get even better, in the future with sustained financial ability to make the changes and investments needed, along with the integration of best practices between the two companies.

Q. What has been FPL's generating fleet performance improvement since its last rate case?

A. From 2017 – 2020, FPL's Fossil/Solar Fleet performance improvements include:

- reducing heat rate by 8 percent
- reducing EFOR by 64 percent
- reducing air emission rates by 13 percent for CO_2, 54 percent for NOx and 80 percent for SO_2
- reducing total non-fuel O&M cost per kW by 16 percent

Q. How has PGD integrated FPL and Gulf operations to become one utility?

A. PGD is supporting the combined utility generating system functioning as one company in all respects including a common set of generation resources with functionally integrated operations. PGD's overall strategy was not to wait, but to integrate Gulf early on upon acquisition. This proactive plan included readying systems and applications to drive efficiencies and involved such facets as:

- People and culture
- Safety reviews and practices
- Integrating operational and maintenance processes
- Integrating Engineering and Central Maintenance staff organizations
- Quality and Six Sigma training
- Production Health Dashboard integration
- Cost controls and reviews (weekly and monthly)
- Production metric controls and reviews (weekly and monthly)

As an operationally consolidated company, FPL is well-positioned to continue driving costs below the national average, while optimizing its generation, including:

- Increased fuel diversity and efficiency
- Reduced emissions
- Excellent reliability and resilience
- Shared best practices

– Improved asset management

– Improved opportunity for coordinated storm response

Q. What improvements are occurring on the Gulf system?

A. As shown on Exhibit TB-7, since Gulf's 2018 pre-acquisition status, a number of ongoing operating improvement areas include:

- EFOR has improved approximately 90 percent, from 3.2 percent in 2018 to 0.3 percent in 2020 – representing top decile to best-in-class performance.
- Heat rate has improved approximately 8 percent from 9,320 Btu/kWh in 2018 down to about 8,500 Btu/kWh in 2020. Combined cycle Plant Smith combustion turbine upgrades completed in 2019 increased base load capacity by approximately 100 MW, and along with the Blue Indigo PV Solar Site addition, are contributing to this greater generation efficiency.
- Non-fuel O&M has also markedly decreased in total dollar cost, from $124 million in 2018 to $80 million in 2020. In terms of $/kW, non-fuel O&M cost has likewise decreased 40 percent from approximately $55/kW in 2018 to $33/kW in 2020. This $/kW cost performance improvement from 2018 to 2020 means that Gulf's competitive position went from being 60 percent higher than the fossil generating industry average to 12 percent below in the last two years.
- Additionally, CO_2 emission rates improved 18 percent over the same 2018 to 2020 period consistent with the combined cycle and solar plant capacity additions mentioned above and general shift away from coal fuel.

Also, management's actions have produced a significant decrease in Gulf's Environmental Cost Recovery Clause costs, and productivity, reflected as megawatts managed per employee, improved from 8.5 in 2017 to approximately 23 in 2020. Furthermore, various additional actions underway or planned (unit modernizations, additions, retirements and fuel conversions) would further contribute to improvements in EFOR, O&M, fuel efficiency, and emission rates. In fact, by the end of 2021, Gulf will have added three 74.5 MW solar facilities to their service area, providing 224 megawatts of fuel-free energy to Northwest Florida.

Q. Has the Gulf acquisition provided any benefits to FPL's generation fleet?

A. Yes. In addition to Gulf's highly reliable generating fleet, Gulf brought a separate labor force that now provides an overall larger, high-quality team to draw from for emergency and storm support. The combined entities also result in increased cost-efficiency and enhanced operations through best practice sharing. Furthermore, Gulf's workforce brings with it several important qualities:

- A proven dedication to reliable generation operations.
- Strong operational talent that allows for additional resource sharing to maintain reliability.
- The ability to provide storm support through a diversified and expanded presence in Florida.

III. FOSSIL/SOLAR GENERATING FLEET NON-FUEL O&M AND CAPEX

Q. How has FPL improved the generating fleet's non-fuel O&M over time?

A. We have worked aggressively to reduce and contain expenses over the last three decades despite a 97 percent cumulative increase in CPI. During that timeframe, FPL's total non-fuel O&M per unit of installed capacity was reduced 49 percent, from $18.5//kW in 1990 to $9.4/kW in 2020 (as shown on Exhibit TB-4). Another indication of FPL's excellent O&M performance (as depicted on Exhibit TB-5), is when comparing to latest available 2019 industry peer group average cost ($37.5/kW), FPL's $9.5/kW cost is 75 percent lower. In addition, if FPL's generating fleet cost of $18.5/kW in 1990 was escalated by CPI to 2020, it would be $36.6/kW, or notably more than triple FPL's $9.4/kW actual cost. Given FPL's 2020 fleet capacity of about 25,000 MW, this approximate $27/kW difference versus either the industry average or FPL's CPI-escalated cost since 1990 represents significant annual non-fuel O&M savings of more than $600 million in 2020 alone.

Since 2017 alone, FPL's Fossil/Solar Fleet reduced total non-fuel O&M cost per kW by 17 percent from $11.3 to $9.4. Additionally, Exhibit TB-5 shows that over the last 15 years, FPL's generating fleet has been best-in-class in total non-fuel O&M per kW among its large electric utility fleet peers. FPL witness Reed's

Productive Efficiency O&M comparison (Exhibit JJR-6, page 12) further supports FPL's production fleet non-fuel O&M performance excellence.

Contributing to FPL's overall excellent generating fleet cost performance is PGD's resource management improvements as shown on Exhibit TB-4, indicating that by 2020, FPL's generating fleet staffing per MW of capacity was about 80 percent less than it was in 1990.

Q. Considering that combined cycle and solar photovoltaic plants are becoming an increasingly greater factor in FPL's expanding and improving operating fleet, how does FPL's O&M performance for these plant types compare to the industry's performance with the same CC and PV technologies?

A. In a separate comparison of these transformative CC and PV technology plants shown on Exhibit TB-8, both FPL and Gulf performed at superior levels in the CC plant O&M cost category (roughly 70 percent better) compared to the industry. FPL's solar PV plant group's performance was also strong.

Q. How does PGD operate and maintain its solar sites to achieve their superior cost efficiency?

A. FPL currently has 33 operating solar sites in Florida comprising approximately 2,300 MW of total installed generating capacity, which is expected to grow. To successfully operate and maintain these sites, PGD typically applies the principles of automation, lean staffing, and cost-effective maintenance and inspection practices, for example using drone technology. As mentioned by FPL witness Valle, FPL developed and continues to improve advanced monitoring technology

and performance analysis tools for its solar energy centers. FPL uses these tools to optimize plant operations, drive process efficiencies, and facilitate the deployment of technical skills as demand for services grows. In 2017, FPL established a Renewable Operations Control Center ("ROCC") to serve as the centralized remote operations center for all FPL PV solar and energy storage facilities. The ROCC provides a mechanism to efficiently manage daily work activities and ensure effective deployment of best operating practices at all of FPL's renewable energy centers. The FPL team has leveraged these capabilities along with its broad range of experience to develop robust and industry-leading operating plans that deliver high levels of reliability and availability at low cost.

Q. How does PGD's 2022 Test Year and 2023 Subsequent Year projected levels of base non-fuel O&M for the Steam and Other Production functions compare to the Commission's benchmarks on MFR C-41?

A. PGD's Steam and Other Production levels of base non-fuel O&M for both the 2022 Test Year and the 2023 Subsequent Year are well below the MFR C-41 O&M benchmark levels on both a portfolio and functional basis for both FPL and Gulf, as well as on a PGD consolidated level. For the 2022 Test Year, PGD's base non-fuel O&M funds request is approximately $106 million below the benchmark. PGD's base non-fuel O&M funds request is approximately $102 million below the benchmark for the 2023 Subsequent Year. This is an impressive accomplishment given the addition of two CC plants (~2,900 MW), four CTs (~900 MW), 55 large-scale solar PV plants (~4,000 MW), and three battery energy storage sites (~470 MW) since 2018, the base year of FPL's O&M benchmark calculation.

As shown on Exhibit TB-3, FPL distinctively transformed and modernized its generating fleet portfolio which, along with our aggressive efforts to reduce and contain expenses, avoided significant O&M costs for customers, reduced air emissions, reduced oil fuel reliance, significantly improved operating fleet performance, and made FPL an industry leader in low-cost generation.

Q. Comparing the 2022 Test Year to the 2021 Prior Year, are there any accounts in which the change to PGD non-fuel O&M exceeds the threshold defined in MFR C-8?

A. FPL has three accounts (502, 510, and 512) that are favorable to the defined thresholds as reductions referenced in MFR C-8, and one account (549) that has increased. I will address each such account.

Decrease of FERC Steam Production Account 502 – Steam Expenses: The $10.3 million decrease in this category is primarily attributable to the Gulf Clean Energy Center (formerly known as Plant Crist) plant conversion from coal to natural gas, which eliminated the need for limestone for the scrubbers. Additional reductions were achieved with the Scherer Unit 4 and Manatee Units 1 & 2 steam plant retirements.

Decrease of FERC Steam Production Account 510 - Maintenance Supervision and Engineering: The $5.0 million decrease in this category is primarily attributable to the Scherer Unit 4 and Manatee Units 1 & 2 steam plant retirements.

Decrease of FERC Steam Production Account 512 - Maintenance of Boiler Plant: The $16.6 million decrease in this category is primarily attributable to the Gulf Clean Energy Center plant conversion from coal to natural gas, which eliminated the need for limestone and the associated O&M costs to operate and maintain its scrubbers. There are also staff reductions that reflect a more efficient natural gas plant configuration as well as reduced maintenance. Additional reductions were achieved with the Scherer Unit 4 and Manatee Units 1 & 2 steam plant retirements.

Increase of FERC Other Production Account 549 – Miscellaneous Other Power Generation Expenses: The approximate $6.9 million increase in this category is related to the addition of six solar sites in 2022 that total approximately 447 MW of clean generating capability as well as the creation of a consolidated control room and fossil center of work excellence for the combined cycle fleet.

Q. Regarding CAPEX, are there any significant long-term infrastructure capacity additions or replacements that will deliver improved system reliability or economic benefits?

A. Yes. Based upon our 2020 Ten Year Site Plan ("TYSP"), in addition to the 2,600 MW of generating capability (approximately 1,720 CC MWs plus 900 PV MWs) added from 2017 to 2019, FPL's and Gulf's roughly 5,000 MW of projected generating capacity additions from 2020 to 2022 focus on several key areas: 33 new solar sites comprising approximately 2,450 MW total installed renewable capacity; 2,200 MW of oil and coal steam unit retirements (at two sites); 1,200 MW of modernized combined cycle capacity (the Dania Beach Clean Energy

Center "DBEC" Unit 7); 938 MW of new fast-starting CTs (at the Gulf Clean Energy Center); and approximately 470 MW of battery energy storage capacity charged by fuel-free solar generation, with the largest 409 MW battery facility in 2021 to partially offset the retirement of Manatee Units 1 & 2. This 409-megawatt Manatee Energy Storage Center will be the world's largest integrated solar powered battery system.

In summary, FPL projects to add, or will have added, approximately 8,400 MW total of new generating capacity from 2017 to 2023 with more than 50 percent Solar PV/Battery Storage capacity versus Natural Gas CC/GT capacity. In 2024 and 2025, FPL projects to add even more PV solar capacity (see FPL witnesses Valle and Sim's testimony for 2024 and 2025 site additions). The reliable operation and maintenance of this additional highly efficient generating capability will also become PGD's functional responsibility.

Q. How will these new generation additions deliver improved system reliability or economic benefits?

A. These new generation additions cited above will continue and, in some cases, improve the excellent performance and operational metrics that I have discussed previously and have shown on my Exhibit TB-4.

Q. Apart from the new generation that you just discussed, are there any additional CAPEX projects that will improve fleet performance?

A. Yes. There are several combined cycle generation upgrade projects that FPL is undertaking to provide greater generating efficiency and higher power outputs.

Additionally, in 2020, we initiated the fuel conversion of Gulf's Clean Energy Center Units 6 & 7 from coal to cleaner natural gas which, as noted in FPL's 2020 TYSP, is expected to result in both lower cost energy generated by the units and significant cost savings.

Q. Would you please provide detail on the generation upgrade projects that you mentioned?

A. Yes. As referenced in the direct testimony of FPL witness Bores, there are several key generation upgrade projects that FPL has undertaken to provide benefits for customers. These upgrade projects across nine combined cycle units, primarily involving 26 General Electric (GE) and 9 Mitsubishi CTs, are projected to result in approximately $780 million in cumulative present value of revenue requirements ("CPVRR") savings over their operating life. Besides an incremental generating fleet efficiency improvement, the total projected peak capacity addition from these upgrades through 2022 is more than 1,000 MW.

Q. Would you please discuss the plant conversion of Gulf's Clean Energy Center Units 6 & 7?

A. Yes. In 2020, Gulf converted the former Crist Units 6 & 7 from coal to burning cleaner natural gas. The result of this project is this plant now runs 100 percent on natural gas providing labor, materials and contractor savings. Specifically, a natural gas plant configuration enabled headcount reductions of over 60 personnel in 2020 and expected materials and contractor savings of approximately $11.5 million from 2022 forward.

The primary savings from the conversion are decreases in FERC non-fuel O&M cost steam production accounts 502 and 512. These decreases are referenced previously in my testimony and are integrated into the improving Gulf fleet O&M cost trend shown on my Exhibit TB-7. This coal-to-gas fuel conversion results in reduced CO_2 emission rates of over 40 percent at the Gulf Clean Energy Center which complements continued emission rate reductions summarized in fleet level operating metrics shown on my Exhibit TB-4.

Q. What are FPL's / Gulf's actual and projected generating fleet non-construction CAPEX over the 2017-2023 period?

A. "Non-construction" refers to all operating plant overhaul and non-overhaul maintenance/reliability capital expenditures. FPL's / Gulf's total fleet average non-construction CAPEX over the 2017 to 2023 timeframe is approximately $630 million annually. Approximately 75 percent of that CAPEX over the final five years is comprised of overhaul-related costs, and those expenditures are essential in maintaining reliability and minimizing fuel usage.

Q. What is the definition of a "major overhaul"?

A. A major overhaul is defined as an overhaul that is performed on larger equipment components, such as CTs, and has a duration of 21 days or greater.

Q. What are the key drivers of the number of Major Overhauls scheduled for 2022?

A. The number of major overhauls required to be performed in 2022 are primarily due to the growth of our fleet and the timing and number of units added over the last two decades. From 2001 through 2022, FPL will have added more than 17,000

MW of combined and simple cycle units at 16 generating units on 11 different sites. These include about 60 new CTs and their associated major components – generators, heat recovery steam generators ("HRSG") and steam turbine generators, along with the balance of plant equipment (motors, fans, valves, etc.). Each of these major components periodically requires a major overhaul, but the cycle varies depending upon the manufacturer of the equipment and the type of component.

To secure the operational benefits of this growing fleet of fuel-efficient facilities, ongoing maintenance and associated CAPEX is necessary. There are approximately eight major overhauls scheduled to be performed in 2022. A Hot Gas Path for the Combustion Turbines is scheduled for Cape Canaveral Unit 3. Generator Minor outages are scheduled at Port Everglades Unit 5 and for Ft. Myers Unit 3. A Combustion Turbine Inspection is scheduled at Lauderdale Unit 6. A Steam Turbine Major is scheduled at Martin Unit 3. At West County, a Combustion Turbine and Generator Major is scheduled at Unit 1 and a Steam Turbine and Generator Major is scheduled at Unit 2. Major overhauls are necessary to maintain unit and system efficiency, performance and reliability.

Q. Are these overhaul expenses in 2022 unusual?

A. No. For FPL, base non-fuel O&M overhaul expenses for the period of 2017 through 2023 average approximately $34.9 million per year. The 2022 base non-fuel O&M overhaul expense forecast is approximately $34.4 million. As

discussed earlier, FPL and Gulf are significantly below base non-fuel O&M benchmarks.

Q. What steps have FPL and Gulf taken, or is FPL planning to take, to reduce O&M and CAPEX associated with operating and maintaining the generating fleet?

A. PGD's cost practices and procedures for controlling expenses have resulted in its continually-improving cost profile as shown in Exhibits TB-4, TB-7, and TB-9. Both O&M and capital cost discipline is a day-to-day priority throughout PGD. We aggressively strive for continual operational excellence along with sharing and replicating cost efficiency improvements across the generating fleet. FPL has further implemented and continues to undertake significant actions to reduce costs primarily through retiring approximately 5,000 MW of older, less efficient generating units over the 2017 to 2022 timeframe as discussed in FPL's 2020 TYSP including: Lauderdale Units 4 & 5 (900 combined MW), Martin Units 1 & 2 (1,600 combined MW), St. Johns River Power Park Coal Plant (250 MW share), Manatee Units 1&2 (1,600 combined MW), and Scherer 4 Coal Unit (600 MW share). Gulf is further projected to be retiring approximately 600 MW of coal-fueled capacity at the Gulf Clean Energy Center along with its ownership portion of Plant Daniel Units 1 and 2 during the subsequent three-year (2023 - 2025) period, further reducing emission rates.

Also, as mentioned earlier, contributing to FPL's overall excellent generating fleet cost performance is PGD's substantial resource management (staffing rate)

improvement as shown on Exhibit TB-4. Our modern, state-of-the-art power plants require significantly fewer people than the older power plants they replaced. Our solar power plants require even lower staffing.

Q. Are FPL's generating fleet O&M and CAPEX forecasts reasonable?

A. Yes. For the reasons outlined in detail in my testimony and exhibits, FPL's 2022 test year and 2023 subsequent year generating fleet O&M and CAPEX forecasts are reasonable and reflect our intentions for continued superior performance. As discussed previously, PGD has the leadership and performance track record for managing and sustaining excellent generating fleet performance. Summarizing:

- PGD's commitment to low-cost, reliable generating fleet performance has been demonstrated by holding non-fuel O&M $/kW cost essentially level for the last 30 years despite inflation, resulting in best-in-class cost performance.
- Our investments have provided and will continue to provide long-term customer benefits through direct operating or maintenance cost savings, increased generating efficiency that provides fuel and air emission avoidance, and maintained or improved system reliability.
- Ongoing maintenance in the form of additional reliability overhauls and spare parts however is required to continue achieving the operational benefits of this growing fleet of fuel-efficient facilities. FPL has a demonstrated track record, as my testimony and exhibits demonstrate, to ensure such costs are reasonable and prudent.

- In addition to FPL's proven track record of providing cost-effective, reliable, efficient power, our combined total non-fuel O&M and CAPEX compares well to industry-weighted CC/PV/Coal technology costs developed by the U.S. Department of Energy's Energy Information Administration ("EIA").
- Essentially, FPL's combined fleet $/kW costs outperform the industry across various comparative views, whether:
  - by total fleet non-fuel O&M on Exhibit TB-7;
  - by key plant type (CC and PV) non-fuel O&M on Exhibit TB-8;
  - or by their combined total non-fuel O&M and CAPEX Major Maintenance expenditures versus EIA's industry-weighted CC/PV/Coal cost on Exhibit TB-9.
- In all cases, FPL's costs are lower and more economical for customers while providing better heat rate and reliability. Our value proposition continues to get even better through investment, operational improvements, and cost-efficient performance. PGD has demonstrated prudent management of its operations over extended periods, with exceptionally positive results, and as an organization is enthusiastic and focused on continuing to transform and improve the consolidated FPL generating fleet to provide even more cost-effective, reliable, and environmentally friendly power for customers.

Q. Does this conclude your direct testimony?

A. Yes, it does.

(Whereupon, prefiled direct testimony of Robert Coffey was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF ROBERT COFFEY

DOCKET NO. 20210015-EI

MARCH 12, 2021

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Robert Coffey. My work address is 15430 Endeavor Dr. Jupiter, Florida 33478.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company ("FPL" or the "Company") as Vice President, Nuclear.

Q. Please describe your duties and responsibilities in that position.

A. I am responsible for the Nuclear fleet functional areas of Engineering, Operations, Maintenance, Chemistry, Radiation Protection, Regulatory Affairs, Security, Training, Outages and Projects.

Q. Please describe your educational background and professional experience.

A. I hold a Doctorate of Management in Organizational Leadership from the University of Phoenix, Masters of Business Administration degree from Regis University, and a Bachelor of Science degree in Nuclear Engineering Technology from Thomas Edison State College. I also earned a Senior Reactor Operator Management Certification at the Turkey Point Nuclear Power Plant.

I have spent over 38 years in the nuclear industry, beginning in the United States Navy Nuclear Submarine Force where I served more than 20 years. I joined FPL in 2003 and held numerous positions of increasing responsibility including Maintenance Director and Work Control Manager at Turkey Point and Plant

General Manager at St. Lucie. I was also the Site Vice President of NextEra Energy's Point Beach Nuclear Plant and Vice President of the Southern Region for St. Lucie and Turkey Point before serving in my current role as Vice President, Nuclear.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- RC-1 Consolidated MFRs Sponsored or Co-sponsored by Robert Coffey
- RC-2 Supplemental FPL and Gulf Standalone Information in MFR Format Sponsored or Co-Sponsored by Robert Coffey
- RC-3 NRC Performance Indicators
- RC-4 NRC Inspection Findings
- RC-5 NRC Regulatory Status
- RC-6 Nuclear Performance Metrics

Q. Are you sponsoring or co-sponsoring any consolidated Minimum Filing Requirements ("MFRs") in this case?

A. Yes. Exhibit RC-1 lists the consolidated MFRs that I am sponsoring or co-sponsoring.

Q. Are you sponsoring or co-sponsoring any schedules in "Supplement 1 – FPL Standalone Information in MFR Format" and "Supplement 2 – Gulf Standalone Information in MFR Format"?

A. Yes. Exhibit RC-2 lists the supplemental FPL and Gulf standalone information in MFR format that I am sponsoring and co-sponsoring.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to: (1) provide an overview of FPL's nuclear operations; (2) describe how FPL's nuclear fleet performance has yielded significant benefits to FPL customers; (3) discuss FPL's changes made to improve performance since the 2016 rate case; and (4) discuss the O&M expenses for the 2022 Test Year and the 2023 Subsequent Year and the capital expenditures from 2019 through 2023 for FPL's nuclear operations.

Q. Please summarize your testimony.

A. FPL's nuclear power plants are a source of safe, reliable, clean and cost-effective base-load energy for FPL's customers. These plants are a key component of FPL's energy mix that provide significant value to FPL's customers in terms of fuel savings, reliability, enhanced system fuel diversity and minimization of greenhouse gas ("GHG") emissions. My testimony summarizes FPL's efforts to help ensure the continued safe, reliable, clean and cost-effective operation of FPL's nuclear power plants to meet the significant operational and regulatory requirements for these plants.

II. BACKGROUND ON FPL'S NUCLEAR ENERGY OPERATIONS

Q. Please summarize the benefits to FPL's customers of FPL's nuclear generation.

A. FPL's nuclear generating assets are critical in maintaining electric system reliability, achieving fuel cost savings, and enhancing system fuel diversity.

Nuclear energy has the highest capacity factor of any other energy source as reported by the U.S. Energy Information Administration. FPL's Unit Capacity Factor for 2020 was 90. FPL's nuclear generating assets are a critical component in achieving reductions in FPL's system emissions of greenhouse gases, sulfur dioxide, nitrogen oxides and particulate matter. FPL's four operating units avoid more than 15 million tons of carbon dioxide emissions each year, which is equivalent to removing more than 3 million cars from the road annually.

Q. Please describe the reliability benefits FPL's nuclear units provide.

A. FPL's nuclear units function as base-load generators, which means they operate continuously to supply power to the grid. In addition to providing safe, clean, and reliable power to Floridians, the nuclear fleet also provides greater flexibility in responding to spikes in demand on FPL's system. The constant supply of base-load power from the nuclear units allows FPL to quickly and efficiently dispatch its other generating units to meet demand during system peaks. This flexibility is especially important when system peaks are caused by unanticipated events, such as extreme weather.

Q. Please describe the fuel cost savings nuclear generation provides to FPL's customers.

A. FPL's nuclear generation has resulted in over $20 billion in fuel savings versus natural gas/fuel oil cost equivalent from January 2000 through 2020. These cost savings are passed directly to FPL customers through lower Fuel and Purchased Power Cost Recovery Clause charges.

Q. Please describe FPL's nuclear plants.

A. FPL's long and successful involvement with nuclear power started in the mid-1960s with the first order for nuclear generation in the south. FPL's plans to build nuclear units at Turkey Point were announced in 1965, and the first nuclear unit achieved commercial operation in 1972. FPL is currently licensed by the Nuclear Regulatory Commission ("NRC") to operate the St. Lucie Nuclear Plant, Units 1 and 2, and the Turkey Point Nuclear Plant, Units 3 and 4. Turkey Point Units 3 and 4 are pressurized water reactors designed by Westinghouse. Unit 3 commenced commercial operation in 1972, and Unit 4 did so in 1973. St. Lucie Units 1 and 2 are pressurized water reactors designed by Combustion Engineering (now owned by Westinghouse). Unit 1 went into commercial operation in 1976, and Unit 2 did so in 1983. The investment to build these units in the 1960s, 1970s, and 1980s has yielded significant value to FPL's customers in terms of safe, reliable, clean and cost-effective, base-load energy.

Q. Describe the ownership structure for FPL's nuclear units.

A. FPL owns 100 percent of Turkey Point Units 3 and 4 and St. Lucie Unit 1. FPL owns 85.10449 percent of St. Lucie Unit 2. The balance of St. Lucie Unit 2 is owned by the Florida Municipal Power Agency, which owns 8.806 percent, and the Orlando Utilities Commission, which owns 6.08951 percent.

Q. How long are FPL's Turkey Point nuclear units currently licensed to operate?

A. In the late 1990s, FPL had the foresight to begin the process to renew the operating licenses so that the benefits of those nuclear units could continue well into the 21st century. In June 2002, FPL received renewed operating licenses from the NRC for

Turkey Point Units 3 and 4. The renewed licenses gave FPL the authority to operate each unit for 20 years past the original license expiration date. In December 2019, FPL received subsequent license renewals ("SLRs") for an additional 20 years of operation for Turkey Point Units 3 and 4, making Turkey Point the first nuclear facility in the U.S. to receive SLR approval from the NRC. Accordingly, the current license expiration dates for FPL's Turkey Point Units 3 and 4 are 2052 and 2053, respectively.

Q. How long are FPL's St. Lucie nuclear units currently licensed to operate?

A. In October 2003, FPL received renewed operating licenses from the NRC for St. Lucie Units 1 and 2, which provided FPL the authority to operate those units for 20 years past the original license expiration date. Accordingly, the current license expiration dates for FPL's St. Lucie Units 1 and 2 are 2036 and 2043, respectively.

Q. Does FPL plan to renew the operating licenses for St. Lucie Units 1 and 2?

A. Yes. In August 2021, FPL will file a request with the NRC for SLRs of St. Lucie Units 1 and 2. If approved by the NRC, operating licenses for St. Lucie Units 1 and 2 will be extended for an additional 20 years, until 2056 and 2063, respectively. The NRC's review of FPL's SLRs for St. Lucie Units 1 and 2 is expected to take approximately 18 months after the request is filed. Given that we have continued to deliver significant value and safe and reliable service to customers through the SLRs we obtained for Turkey Point Units 3 and 4, we have no reason to believe the NRC will not grant our request for SLRs for St. Lucie Units 1 and 2, especially given that none have been denied to date.

III. FPL'S NUCLEAR PLANT PERFORMANCE

Q. What metrics are used by FPL to measure the performance of FPL's nuclear plants?

A. FPL uses many metrics to measure the performance of its nuclear plants, including nuclear safety, regulatory performance (as measured by the NRC), personnel safety, reliability, and overall plant performance (as measured by an objective numerical index maintained by the Institute of Nuclear Power Operations ("INPO")). INPO is an organization that promotes the highest levels of safety and reliability by promoting excellence in the operation of nuclear electric generating plants. FPL is a member of INPO.

Q. What does FPL consider the most important metric in measuring the performance of its nuclear fleet?

A. Nuclear safety is by far the most important aspect of owning and operating FPL's nuclear fleet. The nuclear safety aspects of FPL's nuclear operations are comprehensively regulated by the NRC, the Department of Homeland Security (the Federal Emergency Management Agency), the Department of Energy (Office of Nuclear Energy) and the Environmental Protection Agency. FPL has a strong nuclear safety program that includes:

- Robust plant design and construction;
- Highly experienced and well-trained personnel;
- Stringent plant security;

- Comprehensive safety planning; and
- A commitment to meet or exceed all federal, state and local regulations.

Q. How does the NRC measure FPL's nuclear safety record?

A. The NRC maintains and tracks a set of performance indicators as objective measures of nuclear safety performance for commercial U.S. nuclear plants. These indicators monitor the performance of initiating events, safety systems, fission product barrier integrity, emergency preparedness, occupational and public radiation safety, and physical protection (security). As shown in Exhibit RC-3, all four of FPL's nuclear units are in the "green" band of all NRC Performance Indicators in 2020, indicating the best or highest rating for these indicators of nuclear safety performance. As shown in Exhibit RC-4, the NRC inspection findings for 2020 were also "green," again indicating the best or highest rating for these indicators of nuclear safety performance.

Q. How do FPL's nuclear plants compare to the remainder of the industry in terms of the NRC performance system?

A. Based on the NRC's Performance Indicators, FPL's plants compare favorably with the remainder of the U.S. nuclear industry. The NRC uses its Performance Indicators and inspection activities to determine the appropriate level of agency oversight and response, including the need for supplemental inspections, senior management meetings and regulatory actions.

All of the U.S. nuclear plants are listed in the NRC's Action Matrix, which categorizes each plant into one of five regulatory status columns based on overall

regulatory performance. The five regulatory columns in order of best-to-worst regulatory performance are: (1) licensee response; (2) regulatory response; (3) degraded cornerstone; (4) multiple/repetitive degraded cornerstone; and (5) unacceptable performance.

As illustrated by Exhibit RC-5, none of FPL's units falls into categories requiring increased regulatory oversight as of December 31, 2020. Rather, because of FPL's strong regulatory performance in 2020, FPL's nuclear units are in the "licensee response" column of the NRC's Action Matrix, which results in the normal baseline inspection program. In summary, FPL is proud of its nuclear performance, both from a safety and regulatory standpoint. However, this performance cannot be sustained without continued investment in our nuclear plants and our people.

Q. Please describe the operational performance of FPL's nuclear fleet as measured by the numerical index maintained by INPO.

A. The operational performance of FPL's nuclear fleet reflects a strong nuclear safety and reliability record. FPL measures its nuclear plant performance using the INPO index. The INPO index is a metric of nuclear plant safety and reliability widely used in the U.S. nuclear power industry. In 2020, the INPO index was calculated by summing weighted values of the following key indicators:

1. Unit Capability Factor (5 percent);
2. Online Reliability Loss Factor (10 percent);
3. Operational Loss Events (10 percent);
4. Unavailability of High Pressure Safety Injection System (10 percent);

5. Unavailability of Auxiliary Feedwater System (10 percent);
6. Unavailability of Emergency AC Power System (10 percent);
7. Unplanned Reactor Trips (12.5 percent);
8. Collective Radiation Exposure (10 percent);
9. Sustained Fuel Reliability (10 percent);
10. Chemistry Effectiveness (7.5 percent); and
11. Total Industrial Safety Accident ("TISA") (5 percent).

Since 2017, FPL has taken steps to maintain the overall strong performance of its nuclear operations, which resulted in a low cost per megawatt hour ("MWh"), a high overall INPO Index Value, and consistently high generation. As illustrated by the Nuclear Performance Metrics in Exhibit RC-6, these metrics show a consistently strong performance from 2017 through 2020, resulting in increased low cost output and improved reliability. As with the NRC's metrics that I discussed earlier, however, these improvements cannot be sustained without continued investment in our nuclear plants.

Q. What initiatives has FPL implemented since 2017 in order to achieve this consistent strong performance for the nuclear fleet?

A. FPL's top priority remains providing safe and reliable generation. FPL has maintained the safety and reliability of its nuclear fleet by following its Nuclear Excellence Model ("NEM"), which is the cornerstone of its commitment to achieve and sustain excellence in all aspects of its nuclear operations.

In support of its NEM, FPL has continued to implement its Self-Improving Culture/Learning Organization philosophy through the Continuous Improvement Process ("CIP"), which engages employees to develop and implement solutions to operate more efficiently without compromising safety. This effort has resulted in the implementation of several innovative and dynamic ideas that benefit the customer.

Q. What are some examples of CIP initiatives that have been or will be implemented to operate more efficiently without compromising safety?

A. Some examples of CIP initiatives include developing the infrastructure to increase work efficiency through technology, automation, artificial intelligence/machine learning, robotics and drones. Development and adoption of this technology has automated work processes, training programs, resource awareness and work force analytics, dynamic scheduling and work packages, equipment reliability trending, and value based maintenance.

Q. How does the FPL Nuclear Fleet use robotics and drones to increase work efficiency?

A. FPL is using cost saving robotics and drones to reduce more routine work and lower industrial and radiological safety risks. FPL uses Spot, an agile mobile robot, the first to be used in the nuclear industry to monitor and increase equipment reliability through real-time online monitoring of equipment performance to mitigate issues. Spot can enter high radiation areas and perform inspections, limiting exposure to FPL personnnel. Spot can stay in these areas much longer than a team member, allowing it to perform more detailed inspections. Spot has many

capabilities that are useful in an industrial environment. Spot can read gauges, detect doors, and status fire protection equipment.Spot can go up and down stairs easily, fit into tight spaces, self-correct and stand up without human interference. FPL also uses autonomous drones to perform data collection on canal temperatures, monitor the environment including crocodile nest monitoring, wetland surveys and algae bloom detection.

Q. How does the FPL Nuclear Fleet use artificial intelligence/machine learning to increase equipment reliability?

A. Having a clear understanding of how equipment is performing is a fundamental factor in our drive to continuously improve equipment reliability. Our Center of Work Excellence ("CWE") team is implementing a comprehensive monitoring and diagnostic software program to provide on-demand, easily accessible trending and modeling. The innovative software helps our fleet reduce more routine work through improved detection of equipment performance and predict the useful-life and time-to-failure of equipment, which helps identify the scope and frequency of maintenance through value based maintenance, and provides advanced predictive analytics. Further, instead of spending time gathering data to create a report, artificial intelligence is used to pull the needed data into one easy to read dashboard enabling personnel to spend more time analyzing trends instead of gathering data. The new program directly supports the safe, reliable and event-free operation of our fleet, helping FPL identify and mitigate risk while building margin.

Q. How does the FPL Nuclear Fleet use artificial intelligence/machine learning to increase work efficiency?

A. The FPL Nuclear fleet is changing how we plan, schedule, and execute work activities through the use of digital work packages and computer based procedures to streamline and automate work processes. Digitial work packages automate work assignments and integrate with planning and scheduling. Personnel are auto assigned to work assignments based on expertise and availability. There is also a simplified workflow to generate Work Order Package and add materials from previous work orders with cost information. Computer based procedures integrated approximately 2,000 existing procedures into digital procedures that are dynamic, less prone to errors and automate the close-out process.

The CWE is also changing how we train for work activities. A library of videos for training before performing specific tasks has been developed by CWE. We have implemented new virtual reality training programs that enable more efficient execution of work activities while reducing risk. For example, the crane simulator enables on demand training without taking a crane out of service and affords trainees valuable time behind the controls to practice a variety of scenarios, including worst case scenarios. Additionally, the new firearm simulator is able to create a more realistic experience for the on-site security officers, allowing trainers to modify the scenario in the midst of a session and easily create new scenarios. These simulators help security focus on the fundamentals, such as grip, stance, breathing and situational awareness, during each training session.

These are just a few examples of how FPL has created benefits through utilizing CIP to identify ways to operate more efficiently and create value for customers while at the same time maintaining high standards of quality and safety.

Q. Please describe the personnel safety performance of FPL's nuclear fleet.

A. FPL measures its nuclear fleet personnel safety performance using an INPO performance indicator known as the TISA rate. The current TISA rate over the 18-month period ending December 31, 2020 for the nuclear fleet is 0.00, the best possible rating that can be achieved. The FPL fleet ranks Top Decile in the industry for this indicator. The TISA rate measures the injury rate for all employees and contractors that work at our nuclear sites, and it is based on the total number of injuries per 200,000 man-hours worked over an 18-month period. An injury rate is an effective measure of personnel safety performance because it takes into account the amount of work undertaken during the reporting period in man-hours. The injuries in the TISA rate are industrial in nature and not radiological. The TISA rate includes injuries that would involve radiological consequences, but there have been none at FPL's sites. FPL is committed to conducting its nuclear operations in a safe and responsible manner that avoids injuries of all kinds and promotes the physical safety and well-being of its employees.

IV. CAPTIAL EXPENDITURES FOR FPL'S NUCLEAR BUSINESS UNIT

Q. Please summarize the principal drivers of capital expenditures for FPL's Nuclear Business Unit.

A. There are two principal drivers of capital expenditures in the Nuclear Business Unit: meeting regulatory commitments and sustaining long term operations by addressing equipment obsolescence and life cycle management. To accomplish these goals, FPL invests in equipment to enhance nuclear safety and improve equipment reliability. These investments will allow FPL to maximize fuel savings, enhance system fuel diversity and provide for the safe and reliable operation of its nuclear units through their renewed license terms.

FPL plans to implement projects to meet NRC regulatory requirements including commitments made in order to obtain the SLR for Turkey Point. The NRC approved SLR for Turkey Point in 2019, securing low-cost energy for FPL's customers for an additional 20 years. As a requirement of receiving the operating license extensions, FPL had to make certain commitments requiring capital expenditures.

FPL continues to implement long-term equipment reliability projects that support the safe, reliable and event-free operation of St. Lucie and Turkey Point. Equipment Reliability is essential for safe and cost-effective operation of a nuclear power plant and also for Life Cycle Management and Aging Management

supporting power plant life extension. The primary components addressed in these projects consist of replacement and refurbishment of pumps, motors, valves, breakers and turbines. FPL has planned specific equipment reliability projects through 2023 to address industry operating experience, manage degredation, and optimize how regularly scheduled equipment reliability scope is performed.

Q. Please list the specific equipment reliability projects FPL has planned through 2023.

A. FPL plans to implement numerous equipment realiability projects over the next several years. The most significant of these projects are:

1. St. Lucie and Turkey Point digital control system replacement
2. St. Lucie Non-Segregated Phase Bus ("Non-Seg Bus") replacement;
3. Turkey Point Reactor Coolant Pump ("RCP") upgrade project;
4. St. Lucie integrated reactor head assembly.

Q. Please describe the St. Lucie and Turkey Point digital control system replacement project and explain why it is necessary.

A. The St. Lucie and Turkey Point digital control system replacement project is similar to many capital projects implemented at St. Lucie and Turkey Point in the past to ensure reliable operations are maintained through the life of the plants. The current equipment is not likely to last through the subsequent license renewal term. The analog spare parts are becoming obsolete in the industry resulting in increased maintenance cost and loss of vendor support to replace the obsolete components when necessary. Replacing the analog control systems will increase reliability, reduce system maintenance and reduce the number of system surveillances required

to be performed. This will also result in reductions in O&M costs for the life of the plant for both sites as well as reduce operational risk.

The Turkey Point digital system replacement will be completed in the spring 2022, spring 2023 and fall 2023 refueling outages. The St. Lucie digital system replacement is planned to be completed in the fall 2024 and spring 2025 refueling outages.

Q. Please describe the St. Lucie Non-Seg Bus replacement project and explain why it is necessary.

A. The Non-Seg Bus duct is an assembly of bus conductors with associated connections, joints and insulating supports confined within a metal enclosure without inter-phase barriers. At St. Lucie, the Non-Seg Buses are utilized to provide interface connections betwwen the 4kV and 6.9kV transformers and the 4kV and 6.9kV switchgears.

The Non-Seg Bus and associated components at St. Lucie have shown signs of degradation which will continue if corrective actions are not taken. Failure of a Non-Seg Bus can lead to partial or complete loss of offsite power. In this condition, the Emergency Diesel Generators would be the only emergency power source for the safety buses. Thus, replacement of the Non-Seg Bus in Units 1 and 2 are necessary to maintain reliability of the safety systems and for plant operation.

Cable Buses have been proven to be more reliable than Non-Seg Buses and are not prone to the problems associated with Non-Seg Buses. The cable buses are also almost maintenance free; thus, the Non-Seg Buses at St. Lucie Units 1 and 2 are being replaced with equivalent cable buses.

Q. What is the Turkey Point RCP upgrade project and why is it necessary?

A. Nuclear power plants rely on cooling systems to ensure safe, continuous operation of the nuclear reactor. The purpose of the RCP is to provide forced primary coolant flow to remove and transfer the amount of heat generated in the reactor core. The nuclear industry has seen a rise in the effects of an aging RCP fleet, including component fatigue cracking issues, seal issues, increased vibration and bearing failure. While not a safety issue, potential RCP failures could cause a plant shutdown and potentially extended shutdown if replacement rotating elements are not available. Turkey Point will refurbish or replace the original RCPs to ensure safe and reliable operation into the renewed license term.

Q. Why is the St. Lucie integrated reactor head assembly necessary?

A. The head assembly is a mechanical assembly of various components required to provide cooling of the control rod drive mechanism ("CRDM"), radiation shielding for the CRDM, and the duct work for the air cooling system. All these components are assembled with the reactor vessel head into a single assembly that can be lifted in one lift and moved to the storage stand as a single structure during refueling. The integrated head assembly provides the ability to disconnect the head area cables, the head vent piping, and other instrumentation lines in one step. The integrated reactor head assembly at St. Lucie will simplify the disassembly/reassembly of the

reactor head to reduce outage critical path time by nearly 2 days and reduce outage costs. It will also address reliability and life cycle management issues in support of plant operations.

Q. Are FPL's projected nuclear capital expenditures from 2019 through 2023 necessary and reasonable?

A. Yes. FPL's 2019-2023 capital expenditures include costs to implement projects to meet NRC commitments and to invest in equipment to maintain nuclear safety and improve equipment reliability for long term operation of the plants. This investment will be necessary to ensure FPL's nuclear facilities maximize fuel savings, enhance system fuel diversity, improve efficiency, and allow for the safe and reliable operation of its nuclear units through their renewed license terms.

Q. Do the forecasts for 2022 Test Year and 2023 Subsequent Year O&M costs for the Nuclear Business Unit exceed the Commission's benchmark using 2018 as the benchmark year?

A. No. FPL's 2022 Test Year and 2023 Subsequent Year O&M for Nuclear Production does not exceed the Commission's benchmark, using adjusted 2018 as the benchmark year. For the 2022 Test Year, Nuclear's O&M funds request is approximately $30 million below the benchmark. For the 2023 Subsequent Year, Nuclear's O&M request is approximately $26 million below the benchmark.

Q. What efforts has the Nuclear Business Unit implemented to reduce O&M costs?

A. FPL implemented several CIP initiatives that have resulted in benefits to the customer. As illustrated in RC-6, FPL's cost per MWh has decreased substantially

since the last rate case. In fact, FPL is in the top decile for one of the lowest nuclear O&M costs in the industry. FPL could not achieve this reduction in costs without the implementation of these CIP intitiatives.

Q. Are FPL's projected nuclear O&M expenditures for test year 2022 and subsequent year 2023 necessary and reasonable?

A. Yes. FPL's test and subsequent year expenditures include costs necessary to ensure FPL's nuclear facilities maximize fuel savings, enhance system fuel diversity, and allow for the safe and reliable operation of its nuclear units through their renewed license terms. In total, FPL estimates capital expenditures of $1.6 billion from 2019 through 2023, of which $1.1 billion will be incurred from 2021 through 2023.

Q. Does this conclude your direct testimony?

A. Yes.

(Whereupon, prefiled direct testimony of Christopher Chapel was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF CHRISTOPHER CHAPEL

DOCKET NO. 20210015-EI

MARCH 12, 2021

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I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A. My name is Christopher Chapel. My business address is 700 Universe Blvd, Juno Beach, Florida 33408.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company ("FPL" or the "Company") as Vice President of Customer Service.

Q. Please describe your duties and responsibilities in that position.

A. As Vice President of Customer Service for FPL, I am responsible for maintaining, enhancing, developing and implementing the technology, programs and services that ensure the provision of outstanding, low-cost and efficient customer service to FPL's more than 5,000,000 customers.

Q. Please describe your educational background and professional experience.

A. I am a graduate of Hampden-Sydney College in Virginia. Since joining NextEra Energy in 2000, I have held numerous positions of increasing responsibility within the company, including Vice President of Governmental Affairs for NextEra Energy and Vice President of State Governmental Affairs for NextEra Energy Resources. I joined Customer Service in January 2019 in my current role of Vice President of Customer Service for FPL.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- CC-1 Consolidated MFRs Sponsored or Co-Sponsored by Christopher Chapel
- CC-2 Supplemental FPL and Gulf Standalone Information in MFR Format Sponsored or Co-Sponsored by Christopher Chapel
- CC-3 FPL Customer Service Awards and Recognition
- CC-4 2020 Customer Satisfaction Research
- CC-5 Florida Public Service Commission Logged Complaints
- CC-6 Gulf Power Customer Experience Improvements

Q. Are you sponsoring or co-sponsoring any consolidated Minimum Filing Requirements ("MFRs") in this case?

A. Yes. Exhibit CC-1 lists the consolidated MFRs that I am sponsoring and co-sponsoring.

Q. Are you sponsoring or co-sponsoring any schedules in "Supplement 1 – FPL Standalone Information in MFR Format" and "Supplement 2 – Gulf Standalone Information in MFR Format?"

A. Yes. Exhibit CC-2 lists the supplemental FPL and Gulf standalone information in MFR format that I am sponsoring and co-sponsoring.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe how FPL continues to provide outstanding service to our customers while maintaining low-cost and efficient

operations. I also support the reasonableness of the projected O&M and capital costs set forth in the MFRs for Customer Service.

Q. Please summarize your testimony.

A. FPL strives to provide outstanding service to our customers at the lowest possible cost. Because customer needs and expectations evolve, we continually make enhancements to our offerings and improvements in our technologies and operations through smart, cost-efficient investments.

This past year, FPL responded directly and specifically to the challenges and needs that customers faced as a result of the pandemic. Beginning in mid-March 2020, FPL implemented a series of COVID-19 crisis policies. My testimony provides details of the proactive approach and numerous specific actions FPL took to assist customers experiencing hardship due to the pandemic. These actions ranged from suspending disconnections and late fees to pursuing and receiving Commission approval for various forms of bill relief for residential and small business customers. On top of that, shareholders funded several initiatives including bill relief for low-income customers.

We are proud to maintain an extraordinarily high level of customer satisfaction. FPL has been recognized nationally year-after-year with numerous customer service awards. These awards cover the four core elements that drive high customer satisfaction: customer service, electricity service, price and digital experience. Exhibit CC-3 features a summary of recent customer service

industry awards and recognition, which I address in more detail in my testimony.

FPL achieves outstanding customer service through smart investments in technologies and through process improvements in our operations. We continue to invest in technologies and analytics that reveal insights into our customers' satisfaction with our various service channels. My testimony focuses on the customer value provided by our customer care centers, our Interactive Voice Response ("IVR") system, which includes speech recognition and options to complete 20 different interactive self-service applications, our website with options to complete over 30 self-service applications and our mobile app, which allows customers to more easily access and manage their accounts through their mobile devices. Our focus on continuous improvement is evident in both our high customer satisfaction and our nearly 70% reduction in Commission-logged complaints over the last decade, as demonstrated in Exhibits CC-4 and CC-5. Since its acquisition by NextEra Energy, Gulf Power has been engaged in the process of bringing its performance in line with FPL's and has achieved continuous improvement in several key metrics during this period.

My testimony also demonstrates that FPL achieved outstanding performance in Customer Service while keeping our operating and maintenance ("O&M") expenses extraordinarily low. In fact, as discussed by FPL witness Reed, in

terms of controlling customer expenses, FPL is consistently the top performer in the Florida Utility Group and is in the top quartile of the Straight Electric Group and the Large Utility Group for the past five years since 2015. FPL's Customer Service costs are reasonable and necessary and support our mission to provide great customer value by providing outstanding service, while keeping typical bills low.

II. OVERVIEW OF CUSTOMER SERVICE

Q. Please provide an overview of the Customer Service organization.

A. FPL's Customer Service organization is responsible for all aspects of the customer interface and interaction with the company. We are responsible for developing and executing policies, processes and systems to enhance our customers' experience. Primarily, the organization is comprised of: customer care centers; customer service field operations, which is responsible for account management for large commercial/industrial and governmental customers and other field-related activities; complaint resolution; billing and payment processes; smart meter network operations; and credit and collections activities.

Q. Has FPL received recognition for providing overall outstanding customer satisfaction?

A. Yes. FPL has been recognized for outstanding customer satisfaction in national surveys with components including customer service, reliability, communications, price, corporate citizenship and others.

In 2021, FPL was ranked one of the top digital experiences in the utility industry for the second consecutive year and in 2020, ranked first in residential[1] and second in business[2] electric utility customer satisfaction among peer utilities in the U.S. south region by a global leader in consumer insights, advisory services and data and analytics. FPL was also ranked No. 1 for its omni-channel experience compared to the top 25 U.S. electric providers in the 2020 Verint Experience Index for Electric Utilities. The survey shows which providers deliver winning experiences for each of the four core utility customer experience satisfaction drivers: customer service, reliability, price and website. Verint is a global leader in Actionable Intelligence® solutions with a focus on customer engagement optimization and cyber intelligence.

In 2019, FPL was designated a "Customer Champion" for the sixth consecutive year. This honor is given to gas, electric and combination utilities that exhibit exceptional performance in brand trust, service satisfaction and product expertise and was based on a survey of utility customers conducted by Escalent, a leading nationwide research firm.

In 2018, FPL was recognized as delivering the best customer experience in the utilities industry, according to an annual Temkin Experience Ratings cross-industry customer experience benchmark study. Conducted by Qualtrics XM

[1] https://www.jdpower.com/business/press-releases/2020-electric-utility-residential-customer-satisfaction-study
[2] https://www.jdpower.com/business/press-releases/2020-electric-utility-business-customer-satisfaction-study

Institute, results are based on 10,000 U.S. consumers asked to rate their recent interactions with 318 companies across 20 industries and then to evaluate their experiences across three dimensions: success, effort, and emotion. Qualtrics XM Institute is the leading experience data company and is owned by SAP, the market leader in operational data.

III. CUSTOMER ASSISTANCE DURING THE COVID-19 PANDEMIC

Q. Did FPL provide assistance to customers during the COVID-19 pandemic?

A. Yes. FPL understands the critical role electricity plays in the daily lives of our customers. We continuously strive to support those experiencing hardship. We took proactive and extraordinary measures to assist our customers, especially those who had fallen behind on their electric bills as a result of the COVID-19 global pandemic. Many of these measures and initiatives were aggressively undertaken to assist customers from the onset of the pandemic, and others were added along the way. Perhaps most importantly, we communicated extensively with our customers, ensuring that they all had resources and information – to this end, we executed an unprecedented outreach effort last year, initiating over 4.6 million incremental customer contacts.

In mid-March 2020, FPL implemented COVID-19 crisis policies by voluntarily suspending disconnections for nonpayment, offering special payment extensions and waiving late fees for customers experiencing hardship due to the

pandemic. FPL recognized that challenging times must be met with exceptional measures and took immediate action, seeking and gaining approval from the Florida Public Service Commission (the "Commission") to fast-track annual fuel savings, providing customers a one-time decrease in May of nearly 25% on the typical residential bill.

FPL continued unprecedented customer outreach, urging customers to call us to make payment arrangements and to generate awareness of available financial assistance, including tens of millions of dollars in federal funding for Floridians needing help with utility bills. Federal funding for Florida's Low Income Home Energy Assistance Program ("LIHEAP") increased nearly 60% due to the pandemic.

Additionally, we worked to expand the FPL Care To Share® Program, which provides bill payment assistance to customers. Shareholder, employee and customer donations all increased. Shareholders and employees contributed $5 million to provide relief to our customers in need, including an enhancement to the Care To Share program that will allow customers to contribute set recurring amounts, make one-time donations or round up their bills to the nearest dollar as a voluntary contribution.

Finally, we took action to help our network of more than 800 agencies. These not-for-profit organizations, like the Salvation Army, Children's Home Society,

Community Action Agencies and churches, are responsible for facilitating the qualification and distribution of financial assistance for customers. For example, FPL donated hundreds of laptops to ensure that they could operate remotely and mitigate delays in helping customers in need.

Q. In what other ways did FPL continue to support their customers?

A. FPL provided extensive support for customers experiencing hardship due to the COVID-19 pandemic. In addition to the policies and initiatives previously discussed, FPL:

- Increased customer education efforts, such as communicating stay-at-home tips for conserving energy;
- Continued to offer programs such as Home and Business Energy Surveys and other customer support by phone in lieu of in-person visits;
- Reached out directly to small businesses and helped them connect to the Coronavirus Aid, Relief, and Economic Security ("CARES") Act funding;
- Developed a COVID-19 Business Resource Center with links to tools, tips and CARES Act information;
- Created videos for small businesses on how to reopen safely and efficiently;
- Guest-hosted a series of Chamber of Commerce business webinars featuring energy conservation tips, strategies for efficiently reopening businesses and CARES Act information;

- Conducted proactive outreach to customers whose usage increased significantly, offering energy conservation tips, education and connection to assistance agencies;
- Created a new way to enable customers to make payments toward other customers' accounts, allowing someone to help a friend, family member or neighbor in need;
- Offered up to $200 in direct relief to residential and small business customers who were significantly behind on their electricity bills due to COVID-19 if they paid the remainder of their outstanding balance in full, net of the credit; and
- Accelerated deposit refunds to eligible residential and small business customers who paid their bills in full and on time for the last 12 months.

Q. What is the FPL Main Street Recovery Credit Program?

A. The FPL Main Street Recovery Credit Program is a program offered by FPL and approved by the Commission to help rebuild Florida's economy by boosting small businesses. Eligible establishments include new small businesses; small businesses that were inactive for at least six months; and existing small businesses operating in communities under the Opportunity Zones Program designated by the Florida Department of Economic Opportunity. These eligible small businesses receive a monthly 10% credit on the energy charge portion of their bill for the duration of the program through 2021. FPL understands how vital small businesses are to Florida's $1 trillion

annual economy. We believe offering these targeted bill credits is one more way to help rebuild our economy while helping those in need.

Q. How has Gulf responded to the challenges associated with the COVID-19 pandemic?

A. Much like FPL, Gulf took proactive steps in response to the increased demand for services and support in the Northwest Florida communities that we serve. Gulf suspended disconnection for nonpayment through mid-November 2020 while helping customers connect with needed financial assistance and find ways to save energy with low-cost or no-cost energy efficiency tips to lower their bill. Due to lower fuel costs, we sought and the Commission approved a one-time decrease of approximately 40% for the typical residential customer bill in May 2020. Most business customers experienced a 40-50% decrease in their total bill. Rather than spreading these savings over the remainder of the year, which is the normal practice, we proactively sought approval from this Commission to accelerate the refund at a time when customers needed it most.

Gulf also made several shareholder-funded donations to further assist our communities. The Gulf Power Foundation made a $500,000 donation to the three United Way organizations serving our region, and our leadership donation was further strengthened by other companies in the region who made their own contribution, raising nearly $1 million in charitable giving. Gulf made a $100,000 donation to Project SHARE which is a program administered by the Salvation Army that helps customers in Northwest Florida pay their utility bills.

Gulf Power Economic Development Trust Fund contributed more than $450,000 to the Northwest Florida Small Business COVID-19 Recovery Grant Program which assisted for-profit businesses in Northwest Florida with immediate cash flow needs as a result of a demonstrated economic impact due to COVID-19. These grants were awarded to over 90 small businesses spread across a 9-county area and covered a range of business types.

FPL and Gulf continue to work tirelessly to meet the unique challenges of today, ensuring fairness, balancing long-term considerations and continuing to provide reliable service for all customers. We are very proud of our efforts during the COVID-19 pandemic and continue to look for ways to help our customers during this unprecedented time.

IV. FPL'S APPROACH TO IMPROVING CUSTOMER SERVICE

Q. Please describe FPL's approach to improving customer service.

A. Our goal is to meet customers where they are and how and when they want to be met. We continue to invest in technologies and analytics to gain insights into our customers' satisfaction with our service, whether provided by our agents, our IVR or our digital channels. FPL's investment in advanced analytics enables us to continuously monitor these interactions and identify improvements that help meet the needs of our customers while keeping our costs low. We combine various data points to understand how customers

navigate through our channels to help better assess what's working well and what's not. With this data we can route customers to the most appropriate service to complete their specific tasks. With a better understanding of our customers' interactions, we are able to adapt to their changing needs and interests.

FPL's survey data indicates that more than three-quarters of customers rate their overall experience with the Company as excellent – that's a rating of a 6 or 7 on a 7-point scale. In addition, residential customers are very satisfied with their interactions with our web and mobile channels with ratings of 83% and 90% satisfaction respectively, and 91% are highly satisfied with our field energy experts. Our care center agents are taking the more challenging calls as we move more of the simpler transactions to mobile, web, and IVR channels – and yet residential customer satisfaction with our agents remains high with 77% rating it excellent.

V. CUSTOMER CARE OPERATIONS

Q. Please describe the operation of the customer care centers.

A. Our customer care centers are designed using state-of-the-art technology and are continuously enhanced with the objective of ensuring that customer inquiries are answered promptly and accurately. We staff several locations, including two local college partnerships, and use numerous remote agents that

are configured to act as one virtual contact center handling inbound and outbound calls, as well as emails, letters and faxes.

Q. Please describe FPL's IVR system.

A. FPL continues to invest in our IVR system to enhance existing and develop new applications that allow customers to easily conduct business through self-service. It also helps route customers to the appropriate agent for handling when necessary. We have created capabilities to provide over twenty interactive customer self-service applications including: reporting an outage; inquiring about a bill; paying bills; requesting a payment extension; connecting and disconnecting service; requesting duplicate bills; inquiring about a high-bill; and, obtaining general information on many other services we provide. In 2020, FPL's IVR self-service telephone system processed nearly 14 million transactions. These transactions account for 79% of all phone calls received by FPL, resulting in an annual savings to all customers of approximately $28 million.

Since 2016, we have continued to invest in enhancing our IVR in several ways, providing customers with new options and improving their experience, while reducing costs by $2.7 million annually. Several key enhancements include:

- Introducing speech recognition, which allows customers to more easily use the system by speaking their responses instead of having to press buttons;

- Analyzing a customer's account status and activity to proactively provide relevant details and customized options at the start of the call that are likely related to the reason for the call;
- Adding new self-service applications that allow customers to easily obtain information on their deposit, maintain automatic bill pay details, and start new electric service;
- Offering two-way text interactions to help capture complex pieces of information like service address and email address; and
- Sending text ("SMS") and email messages with links to services on FPL.com where customers can complete their request online.

FPL will continue to make smart investments in our IVR to ensure it continues to meet customer expectations. In addition to expanding and enhancing existing features, we are currently working to introduce natural language understanding ("NLU") technology on the IVR. Initially, NLU will allow us to replace our existing menu structure with a single "how can I help you?" question, allowing customers to more quickly and easily identify the reason for their call. Longer-term, we plan to redesign many of our self-service applications to make them more conversational. This will transform the customer experience with IVR to more of a smart device-like interaction.

VI. CUSTOMER SERVICE FIELD OPERATIONS

Q. Please describe how FPL provides service through its field operations group.

A. FPL provides services to customers through its residential, small/medium business, governmental, and commercial/industrial field representatives. This group of employees is dedicated to serving individual customers at their home or place of business and by phone. These services include on-site analysis of business or home energy use, high bill investigations, or investigation of any other concerns that customers may have about their account. Recognizing that our larger commercial/industrial and governmental customers have a broader range of needs, FPL representatives provide a personalized level of service to these customers. A dedicated account manager serves as a single point of contact for all energy-related and customer service issues for these large, complex energy users. A dedicated account team supports the efforts of the account manager in the areas of rates, reliability, new construction, new energy technology, billing, energy efficiency, and innovative solutions.

Q. Has FPL been recognized for outstanding performance in the area of Customer Service field operations?

A. Yes. Our business account management team has been recognized nationally for its performance. FPL received the Edison Electric Institute ("EEI") 2020 National Key Accounts Award for Outstanding Customer Service. The award recognizes utility companies that have developed and/or maintained

exceptional National Key Accounts programs based on quality customer service. This is the third time FPL has received the award since 2017.

In addition, FPL ranked second in the national 2019 E Source Gap and Priority Benchmark survey of large business customers in recognition of their satisfaction with the utility and the value provided by account representatives. This survey is based on responses from more than 1,000 U.S. utility large business customers. FPL also ranked third in the national 2019 E Source Gap and Priority Benchmark survey of small and medium business customers. This survey is based on responses from more than 3,000 U.S. utility small and medium business customers. E Source provides independent research, advisory and information services to utilities, major energy users and other key players in the retail energy marketplace. FPL received high scores in all categories, including satisfaction with the utility and with its account representative.

VII. DIGITAL EXPERIENCE

Q. How is FPL continuing to improve the customer experience through the digital channel?

A. The Company understands that customers want an easy-to-use, straightforward digital experience. FPL works relentlessly to provide our customers with the most relevant, personalized and timely information when and where they need it. This has been the focus of our ongoing digital transformation.

Increasingly, customers are choosing to interact with us through FPL.com. Traffic grew to more than 60 million visits in 2019 from less than 44 million in 2016, an increase of over 35%. Since Hurricane Irma, FPL's digital capabilities have been enhanced to better support customers during hurricanes and other storm events, as well as during normal weather conditions. We have improved our outage reporting process, built a process for reporting down wires through the FPL mobile app and completely revamped our streetlight reporting process. Every year, new projects are evaluated and implemented to enhance our customers' digital experience including improvements to their move in/move out; billing and payments; manage account; outage; and energy efficiency experiences. We currently have over 30 self-service applications available on FPL.com, and in 2018, FPL launched a virtual assistant, "Julia, the Support Expert," to help evolve customer support on the website.

FPL continues to develop and enhance the FPL mobile app. Self-service is the primary focus of the app. Customers can easily manage their account, from viewing and paying their bill; to checking their hourly, daily and monthly energy usage; to reporting and checking outages and more. Our customers visited the FPL mobile app in 2019 nearly 24 million times, with more than 3 million self-service transactions. The mobile app has seen high customer satisfaction, as well as significant growth since it was launched in 2017. In fact, it is one of the few utility mobile apps with a 4.8 (out of 5) star rating in the Apple app store.

Q. Please describe how FPL's social media program has evolved to keep pace with customers' changing expectations.

A. As social media communication platforms have become a mainstay of how customers transact business with their utility providers, FPL has continued to see a steady portion of its customer base contacting us for account-related service through these channels. FPL began to offer direct customer service via social media seven days a week in 2017 and leverages social media technology to actively listen for mentions of FPL and then proactively contact customers on issues related to their service. We also use these channels to educate customers about scams, safety around lines and equipment, service reliability updates, and ways to save on their bills.

As customer expectations have increased regarding the immediacy of information provided in an emergency or storm, FPL has continued to use social media to improve the overall availability and speed at which customers receive information. In addition to having a social media rapid response team posting information so it reaches as many stakeholders as possible and engages with customers who have questions, FPL has incorporated more interactive content delivery methods, such as Facebook Live, to conduct real-time question and answer sessions with customers. In the event of a major storm, social media serves as a central point of communication throughout the event. During Hurricane Irma, for example, FPL published 680 messages to Facebook,

Twitter and YouTube; its messages were viewed over 33 million times and over 107,000 inquiries or messages were posted to FPL social channels.

As media consumption habits have shifted over the past several years to incorporate more online video, FPL has adapted to meet customers' expectations in the channels they prefer. For example, FPL shares energy efficiency tips and ways customers can save on their bill via YouTube and video streaming platforms. This content is provided in both English and Spanish. FPL also uses social media channels like Instagram to expand the availability of information to customers.

VIII. ECONOMIC ASSISTANCE FOR LOW-INCOME CUSTOMERS

Q. Please discuss the energy affordability initiatives for payment assistance.

A. FPL's ASSIST program helps eligible customers by facilitating emergency payment assistance, including LIHEAP, through state and community action agencies and nonprofits, as well as social service and faith-based organizations. The program includes a network of over 800 partners in Florida who determine if customers are eligible for assistance. The program also helps disburse the assistance funds. In 2018, the FPL ASSIST web portal was implemented to create a more efficient process for assistance agencies to process customer commitments. FPL also recently partnered with the Florida Association of Community Action Agencies to create a working group with the Department of

Economic Opportunity, looking for ways to bring efficiency to the LIHEAP disbursement process. A pilot is in process, which will streamline the qualification process by allowing the agencies to work with the utility on the customer's behalf and proactively offer LIHEAP to customers who have qualified previously and are in arrears.

FPL has sponsored the FPL Care To Share program since 1994. This program combines donations from customers, NextEra Energy employees and NextEra Energy shareholders and has provided an average of $1.4 million annually over the past 14 years to customers in need. The funds are administered similarly to LIHEAP funds, through partner agencies that receive funds from FPL and handle the complete intake and qualification process.

FPL employees work closely with the agencies to assist low-income customers while resources are allocated and secured for them. In 2020, our low-income customers received over 105,000 assistance payments from numerous agencies, representing nearly $41 million credited toward their electric bills.

Q. What other initiatives has FPL worked on to increase payment assistance to customers?

A. FPL leads several other initiatives with a focus on growing available energy assistance resources, including identification of new funding sources. FPL is a co-founder of the Coalition for Affordable Energy for All, in partnership with Entergy, TXU Energy, Atmos Energy, Arizona Public Service, Tucson Electric

Power, Salt River Project, and other utilities. These partners work together to advocate for congressional funding and a fairer methodology for administering the federal LIHEAP Program. Costs for these advocacy efforts are recorded below-the-line and thus not included in this base rate request. FPL also serves on the board of the National Energy and Utility Affordability Coalition working to address the energy burden needs of customers across the country.

To ensure that customers in need are aware of the availability of assistance funds, we provide customers with the contact information of local social services agencies that partner with FPL's ASSIST program. We provide a specific agency name and phone number to customers in need on FPL's website based on the customer's ZIP code. Our Customer Care representatives also have access to information at the ZIP code level and offer the same information to callers when appropriate.

Q. Has FPL implemented any new low-income programs?

A. Yes. In early 2020, we launched FPL SolarTogether, a program designed to provide customers with an opportunity to participate in the benefits of solar. FPL SolarTogether includes an allocated portion of its solar capacity to low-income customers through the FPL SolarTogether SunAssist program. This program provides qualified low-income participants with day-one bill savings, lowering their monthly energy bill immediately.

As part of FPL's COVID-19 assistance programs, several low-income initiatives were implemented, including providing eligible customers a credit of up to $20 each month on their bill; advertising for low-income programs, such as LIHEAP, Care To Share and weatherization; and, making an approximate $3.36 million employee and shareholder donation to Care To Share. Shareholders additionally invested $1.8 million to further improve the Care To Share program by making it easier for customers to make donations and enhancing the FPL ASSIST web portal.

IX. COMPLAINT RESOLUTION

Q. How does FPL handle customer complaints?

A. FPL's goal is to ensure that all customers are completely satisfied with the handling of their inquiries. We have developed a process that is designed to maximize the opportunity to successfully address customers' concerns. Customers who contact the care center and want their inquiry escalated are offered the option of speaking with a care center account supervisor. Account supervisors are a group of employees with more experience and broader authority who are dedicated to resolving customer issues quickly and efficiently. They resolve most calls directly. However, if a call requires follow-up with a department outside of the care center, the customer is provided the department name to which their matter is being referred, as well as a timeframe in which the appropriate representative will contact the customer for resolution.

Additionally, the customer is given the care center account supervisor's name and telephone number in the event they need further assistance. A ticket for follow-up is then created, and the matter is monitored for completion in a timely manner.

If a complaint is not resolved to the customer's satisfaction, the customer may choose to contact the Commission. As part of our complaint handling process, FPL participates in the Transfer-Connect and Email processes established by the Commission to help resolve disputes between regulated companies and their customers as quickly, effectively, and inexpensively as possible. These processes involve transferring the customer call or email directly from the Commission to a specialized group of FPL customer advocates for expedited handling, if the customer agrees.

Q. How has the number of FPL customer contacts with the Commission changed in recent years?

A. Complaints recorded as "logged" in the Florida Public Service Commission Consumer Activity Report have dropped from 346 in 2010 to 124 in 2019 – a 64% reduction for FPL. At the same time, the number of customers we serve increased by 12% over that same period. FPL recorded 0.02 complaints per 1,000 customers in 2019, compared to 0.08 complaints per 1,000 customers in 2010, a reduction of nearly 70% over the last decade. Attached to my testimony is Exhibit CC-5, Florida Public Service Commission Logged Complaints, which is a summary of logged complaint data per 1,000 customers for FPL from

2010 through 2019 and for the five Florida investor-owned utilities for 2019. The data shows that in 2019, FPL had the lowest level of logged complaints when compared to the other utilities. Reliability-related logged complaints are referenced in the direct testimony of FPL witness Spoor.

X. CUSTOMER SERVICE O&M EXPENSE

Q. Please provide an overview of Customer Service's O&M expenses.

A. Customer Service O&M is driven by several key activities including billing, payment processing, customer care operations, credit and collections, and various field and support activities to serve our customers. In addition to these activities, uncollectible expense is a cost driver for Customer Service O&M. As demonstrated by my testimony thus far and MFR C-41, O&M Benchmark Variance by Function, FPL Customer Service has worked hard to invest in systems and solutions that provide customers with options to serve them in a manner they choose and, at the same time, provide significant cost reductions. This focus continues to keep cost low. When comparing the Customer Accounts, Customer Service, and Sales functional areas' O&M expenses, adjusted to exclude energy conservation cost recovery cost, FPL's forecasted cost per customer for 2022 is $23.51 vs. $26.97 in 2016 – a 13% reduction and a testament to our ability of providing outstanding customer service at a low cost.

Q. How did COVID-19 impact bad debt?

A. In mid-March 2020, as a result of COVID-19, disconnection for nonpayment was suspended and did not resume until October 1, 2020 for FPL and mid-November 2020 for Gulf. While many programs were employed to assist our customers, the lasting impact of COVID-19 and the suspension of disconnections for nonpayment had a significant impact on bad debt. FPL is projected to incur $46 million of incremental bad debt across 2020 and 2021 and Gulf is projected to incur $19.5 million. FPL has the ability to offset the pandemic-related impact of higher bad debt in 2020 and 2021 through the use of reserve amortization while Gulf obtained Commission approval to defer incremental bad debt by establishing a regulatory asset. To determine the COVID-related bad debt expense eligible to be deferred as a regulatory asset, Gulf subtracts the average bad debt expense for the corresponding months in the three prior years from the same months in 2020 and 2021.

Q. How do the Customer Accounts, Customer Service, and Sales functional areas' O&M expenses for the 2022 Test Year compare to the Commission's O&M benchmarks (MFR C-41, O&M Benchmark Variance by Function)?

A. The Customer Accounts and Customer Service 2022 Test Year O&M expenses are below the Commission's O&M benchmark thresholds for each functional area. The Sales 2022 Test Year O&M expenses are higher than the Commission's O&M benchmark by 11% driven primarily by expenses related to performance contracting projects. These projects provide commercial customers with turnkey services designed to increase the energy efficiency of

the customers' facilities. Revenue generated from these projects fully offset the expenses.

Q. How do the Customer Accounts, Customer Service, and Sales functional areas' O&M expenses for the 2023 Subsequent Year compare to the Commission's O&M benchmarks (MFR C-41, O&M Benchmark Variance by Function)?

A. The Customer Accounts and Customer Service 2023 Subsequent Year O&M expenses are below the Commission's O&M benchmark thresholds for each functional area. The Sales 2023 Subsequent Year O&M expenses are higher than the Commission's O&M benchmark by 11% driven primarily by expenses related to performance contracting projects. These projects provide commercial customers with turnkey services designed to increase the energy efficiency of the customers' facilities. Revenue generated from these projects fully offset the expenses.

XI. BENEFITS OF CONSOLIDATION

Q. Please describe some of the benefits of the consolidation of the FPL and Gulf customer service organizations.

A. The consolidation of the FPL and Gulf customer service organizations already has provided and will continue to provide benefits to all customers. Combining both customer service business units into one is providing synergies and the integration of best practices that will improve our customers' overall

experience. Benefits include enhanced business continuity, leveraging FPL's third-party call center at Gulf, enhanced reporting and dashboards and sharing best practices and expertise around the customer experience, systems and self-service opportunities.

Additionally, the foundation for a new FPL customer information system ("CIS") is now in place by way of Gulf, which recently implemented a new system after not previously owning one. While FPL has enhanced its system over the years to make it robust, it will require replacement when the technology becomes obsolete in the next decade. Gulf's new system, built on a platform that we continue to optimize, will serve as the basis for FPL's future CIS. Importantly, through Gulf's transition into a new system, we've learned how to improve customers' experience, better positioning FPL for a future implementation.

Q. Are there additional benefits to Gulf customers resulting from consolidation with FPL?

A. Yes. Gulf Power has been engaged in the process of bringing its performance in line with FPL's since its acquisition by NextEra Energy. Exhibit CC-6, Gulf Power Customer Experience Improvements, illustrates continuous improvement in two key metrics during this period. In the face of significant challenges, including the COVID-19 pandemic and direct impacts in Northwest Florida from the most active Atlantic hurricane season on record, the average time that it takes for a Gulf customer to speak to a representative has improved

by 70%. Exhibit CC-6 also shows how Gulf has improved the utilization of the phone self-service system, placing more control into the hands of our customers to transact with us at their convenience.

XII. SERVICE CHARGES

Q. Is FPL proposing any changes to its service charges?

A. Yes. FPL has updated the cost basis of the Company's service charges as shown on MFR E-7. Deployment of smart meters has automated field activities, including meter reading and service connection and disconnection, which eliminates the need to send FPL personnel out to a customer's property. Due to continued automation and cost reduction, the updated cost-based service charges are significantly lower than current charges. These changes reflect FPL's operating philosophy in striving to deliver excellent service at low cost. The proposed service charges are shown on MFR E-13b, aligning the rates for these services with their current cost structure.

At FPL, we take meter tampering and electricity theft seriously. Meter tampering is not only a crime; it is also extremely dangerous. Those who tamper with a meter place themselves and others, including occupants, neighbors, electricians, and FPL employees at serious risk of injury or death. In Docket No. 160021-EI, FPL received approval to add a meter tampering penalty charge of $200 for residential and non-demand commercial customers

(*i.e.*, GS-1) and $1,000 for all other customers. FPL's Tariff 6.061 states that "Unauthorized connections to, or tampering with the Company's meter or meters, or meter seals, or indications or evidence thereof, subjects the Customer to immediate discontinuance of service, prosecution under the laws of Florida, adjustment of prior bills for services rendered, a tampering penalty of $200 for residential and non-demand commercial customers and $1,000 for all other customers, and reimbursement to the Company for all extra expenses incurred on this account." Since implementation of the charge in 2017, FPL has seen a decrease of nearly 60% in the number of confirmed meter tampering cases where customers tamper with the meter after a service disconnect. However, 378 customers tampered with the meter again after having paid the meter tampering charge before. Additionally, in 2020, we still investigated nearly 8,000 cases of meter tampering and recovered the equivalent of approximately $2 million in stolen electricity. In order to further deter customers from tampering with meters FPL proposes to increase the charge to $500 for residential and non-demand commercial customers (*i.e.*, GS-1) and $2,500 for all other customers. We work hard to serve our customers in the most cost-efficient manner possible. When someone tampers with a meter, it adds to our cost of doing business and that affects everyone's bills. The increase of the meter tampering penalty will further deter the theft of electricity, supporting our goal of driving energy theft to zero and further benefit the general body of customers.

FPL is proposing to modify the existing field collection charge, which is currently only billed to a customer when a payment is accepted in the field, to a field visit charge. The modified field visit charge will be billed to delinquent customers in occurrences where FPL must visit the customer's premise and *either* collect a payment or leave a notice; the latter occurs when an attempt to collect a payment or disconnect service is unsuccessful. Under the existing field collection charge, customers are not billed a service charge when FPL leaves a notice, but will now be billed under the modified field visit charge.

In addition to these changes, through rate unification, Gulf's service charges will be brought into alignment with FPL's.

Q. Does this conclude your direct testimony?

A. Yes.

(Whereupon, prefiled rebuttal testimony of Christopher Chapel was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

REBUTTAL TESTIMONY OF CHRISTOPHER CHAPEL

DOCKET NO. 20210015-EI

JULY 14, 2021

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Christopher Chapel, and my business address is Florida Power & Light Company ("FPL" or the "Company"), 700 Universe Boulevard, Juno Beach, Florida 33408.

Q. Have you previously submitted direct testimony in this proceeding?

A. Yes.

Q. Are you co-sponsoring or sponsoring any rebuttal exhibits in this case?

A. Yes. I am co-sponsoring the following rebuttal exhibit:

- LF-10 – FPL's Notice of Identified Adjustments filed May 7, 2021 and Witness Sponsorship, filed with the rebuttal testimony of FPL witness Fuentes.

II. OVERVIEW

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to address statements made by CLEO Institute and Vote Solar's witness Whited regarding disconnections and reconnections in 2020-2021, as well as recommendations that she makes regarding disconnection policies during emergencies and extreme temperature events. In response to general suggestions made by CLEO Institute and Vote Solar's witness Volkmann, I also discuss the strong customer satisfaction with

Florida Power & Light Company's ("FPL") and Gulf Power Company's ("Gulf") reliability.

Q. Please summarize your rebuttal testimony.

A. My rebuttal testimony uses actual data and information to show that witness Whited's contention that FPL/Gulf have disproportionately disconnected customers in an "aggressive" manner is simply not true. My rebuttal testimony also shows that FPL/Gulf already have the very protections that witness Whited suggests be in place to address customer disconnections during emergencies and extreme temperature events, making witness Whited's recommendations that FPL/Gulf adopt such policies unnecessary. Finally, my testimony shows that the Company's reliability has been and remains important to our customers, rebutting the general theme in a section of witness Volkmann's testimony where he implies, without basis, that FPL/Gulf's reliability is not significantly important to FPL/Gulf's customers.

III. FPL/GULF'S RATE OF DISCONNECTIONS AND RECONNECTIONS DURING 2020-2021

Q. How do you respond to witness Whited's testimony regarding customer disconnections in 2020-2021?

A. On pages 13 through 15 of her testimony, witness Whited suggests that FPL/Gulf's disconnections and disconnections without reconnections between September 2020 and April 2021 are disproportionate when compared to Duke

Energy Florida and Tampa Electric Company. However, year-over-year comparisons within FPL/Gulf show that the Company has not been "aggressive" with its residential disconnections, relative to similar pre-COVID-19 timeframes, nor has the Company experienced a significant change in the percent of residential accounts that are reconnected after disconnection relative to similar pre-COVID-19 timeframes as is seen in the table below.

Company	Timeframe	Disconnects	Reconnects	Reconnect Rate
FPL	October 2020 – April 2021	538,886	496,726	92%
	October 2018 – April 2019	507,657	475,837	94%
	October 2017 – April 2018(1)	526,505	489,678	93%
Gulf	November 2020 – April 2021	19,805	15,449	78%
	November 2018 – April 2019(2)	19,108	12,810	67%
	January 2018 – April 2018(2)	12,508	8,559	68%

(1) Partially impacted by September – October 2017 collections suspension due to Hurricane Irma.
(2) Southern Company data for Gulf. Not available prior to January 2018.

With respect to reconnection rates, it is also important to recognize that not every customer is reconnected every time, as shown by the information above, and that that has nothing to do with the pandemic. Customers frequently move, change the account owner, or have other circumstances for not reconnecting, and this fact further demonstrates that without context, simple numerical comparisons aren't particularly meaningful.

Furthermore, it is important to note that FPL/Gulf continue to work with customers experiencing hardship due to the COVID-19 pandemic by offering flexible payment plans and cancelling late fees. Disconnection has been, is and always will be the very last resort for us.

IV. FPL/GULF'S DISCONNECTION POLICES DURING EMERGENCIES AND EXTREME TEMPERATURE EVENTS

Q. How do you respond to witness Whited's recommendations that FPL/Gulf adopt policies for disconnections during emergencies and extreme temperature events?

A. On pages 27 and 28 of her testimony, witness Whited states that FPL/Gulf should adopt policies that suspend customer disconnections during emergencies and extreme temperature events. However, FPL/Gulf voluntarily have these policies already in place. This was demonstrated when FPL/Gulf voluntarily suspended disconnections from March through October 2020 during the height of the COVID-19 emergency. The Company also already suspends disconnections in geographic areas that are forecasted to be impacted and that are impacted by severe weather events such as hurricanes. Lastly, the Company has an existing voluntary policy in place to suspend disconnections during extreme cold and heat events. Therefore, witness Whited's recommendation that we enact these policies is both redundant and factually misguided.

V. CUSTOMER SATISFACTION WITH FPL/GULF'S RELIABILITY

Q. What points do you wish to make regarding FPL/Gulf's reliability in response to witness Volkmann?

A. Although witness Volkmann acknowledges that FPL/Gulf's reliability is "very good compared to other utilities," he nonetheless implies on page 11 of his testimony that customers do not place a high premium on reliable electric service. While FPL witness Spoor responds to witness Volkmann's specific arguments about investments and reliability metrics, I, from a customer service perspective, want to reiterate the fact that our customers care deeply about having reliable electric service.

As we saw during the Quality of Service Hearings in this matter, our customers specifically cited service reliability as an important and/or determining factor in their support – 246 of the 379 customers who testified specifically cited reliability. Importantly, even customers not supportive of FPL's request agreed our reliability is excellent. Further, our actual complaint data bears this out as well. Overall, service reliability complaints per 10,000 customers are trending down year over year. As noted in FPL witness Spoor's direct testimony, reliability-related logged complaints per 10,000 customers have decreased by 32% from 2016 to 2020. Based on year-to-date complaints, we continue our track of historically low service reliability complaints in 2021. Thus, apart from the pure commonsensical fact that customers do in fact care about having highly

reliable access to electric power, especially in times when they were working and schooling from home during the last year, our customers themselves have told us that reliability matters and that they are very happy with the reliable service that they are receiving.

Q. Does this conclude your rebuttal testimony?

A. Yes.

(Whereupon, prefiled direct testimony of Jeffrey T. Kopp was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF JEFFREY T. KOPP

DOCKET NO. 20210015-EI

MARCH 12, 2021

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I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A. My name is Jeffrey (Jeff) T. Kopp, and my business address is 9400 Ward Parkway, Kansas City, Missouri 64114.

Q. By whom are you employed and what is your position?

A. I am employed by 1898 & Co., which is the consulting group within Burns & McDonnell Engineering Company, Inc. ("BMcD"), as the managing director of the Utility Consulting Department.

Q. Please describe your duties and responsibilities in that position.

A. I am a professional engineer with more than 19 years of experience consulting to electric utilities. I have been involved in numerous dismantlement studies and served as project manager on the majority of them. I have helped prepare dismantlement studies on all types of power plants utilizing various technologies and fuels.

As the Managing Director of the Utility Consulting Department of 1898 & Co., I oversee a group of more than 110 engineers and consultants who provide consulting services to clients primarily in the electric power generation and electric power transmission industries but also to other industrial and commercial clients. The services provided by this group include dismantlement cost studies, independent engineering assessments of existing power generation assets, economic evaluations of capital expenditures, new power generation

development and evaluation, electric and water rate analysis, electric transmission planning, generation resource planning, renewable power development, and other related engineering and economic assessments.

Q. Please describe your educational background and professional experience.

A. I have a Bachelor's Degree in Civil Engineering from the University of Missouri – Rolla (now the Missouri University of Science and Technology) and a Masters of Business Administration from the University of Kansas. In my role as a group manager, project manager, and project engineer, I have worked on and have overseen consulting activities for coal, natural gas, wind, solar, hydroelectric, and biomass power generation facilities.

Q. Are you sponsoring or co-sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- JTK-2 Resume of Jeffrey T. Kopp

I am co-sponsoring the following exhibits:

- JTK-1 2021 Dismantlement Study
- TCC-9 Rates for FPL and Gulf as Separate Ratemaking Entities, filed with the direct testimony of Florida Power & Light Company ("FPL" or the "Company") witness Cohen where it incorporates my exhibit JTK-1.

Q. Was the dismantlement study attached to your testimony as Exhibit JTK-1 prepared by you or under your supervision?

A. Yes.

Q. Are you sponsoring or co-sponsoring any consolidated Minimum Filing Requirements ("MFRs") in this case?

A. No.

Q. Are you sponsoring or co-sponsoring any schedules in "Supplement 1 – FPL Standalone Information in MFR Format" and "Supplement 2 – Gulf Standalone Information in MFR Format"?

A. No.

Q. How will you refer to FPL and Gulf when discussing them in testimony?

A. Operations and time periods after January 1, 2022 are referred to as FPL because Gulf Power Company ("Gulf") will be consolidated into FPL. Therefore, unless otherwise noted, my testimony and references to FPL address the consolidated Company.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe and support FPL's "Dismantlement Cost Estimate Study" ("Dismantlement Study") for its electric generating units, as prepared by 1898 & Co. The Dismantlement Study report is attached to my testimony as Exhibit JTK-1. The Dismantlement Study is an update of a prior study that I prepared for FPL to support their filings in Docket Nos. 160021-EI and 160062-EI.

Q. Please summarize your testimony.

A. My testimony presents and explains the Dismantlement Study prepared by 1898 & Co. under my direction on behalf of FPL, for the FPL- and Gulf-owned power generating facilities. I outline my and my company's qualifications to prepare

dismantlement costs, the facilities evaluated in the study, and the level of dismantlement and site restoration that is the basis of the estimates. I describe the methodology employed to develop the direct costs for dismantlement activities, as well as costs for contingency and indirect costs calculated on top of the direct costs. Lastly, I conclude that these estimated costs are reasonable and appropriate for use in the development of dismantlement accruals for FPL's electric generating plants.

II. FPL'S DISMANTLEMENT STUDY

Q. What qualifies 1898 & Co., as a part of BMcD, to prepare accurate estimates of dismantlement costs?

A. Over the years, 1898 & Co. and BMcD have worked closely with demolition contractors in developing decommissioning cost estimates to more accurately estimate the costs for activities that the demolition contractors will perform. 1898 & Co. and BMcD have prepared numerous decommissioning studies for various clients considering different technologies in several different states and have provided services to clients on decommissioning project execution that have included review and evaluation of bids from demolition contractors. 1898 & Co. and BMcD have utilized this experience preparing decommissioning estimates as well as reviewing demolition contractor bids.

At the time FPL decides to decommission the plants, means and methods will not be dictated to the contractor by 1898 & Co. It will be the contractor's responsibility to determine means and methods that result in safely decommissioning and dismantling the plants at the lowest reasonable cost. However, based on 1898 & Co.'s experience with decommissioning projects and discussions with demolition contractors, the costs estimated by 1898 & Co. are reflective of what contractors would bid, through a competitive bidding process, given the option to select safe and efficient means and methods.

As indicated above, 1898 & Co. and BMcD have vast experience in preparation of decommissioning studies, overseeing demolition projects, and executing construction projects. In order to execute over $2 billion of construction projects on an annual basis, BMcD has to win this work through competitive bidding processes, which requires us to be able to accurately prepare cost estimates. If we routinely estimated costs too high, we would not be successful in winning projects. If we routinely estimated costs too low, we would not be able to execute projects profitably and would no longer be active in this market.

Our long history, large market presence, and top industry rankings demonstrate our ability to effectively and accurately estimate costs. In addition, we have reviewed competitive bids from demolition contractors for power plant demolition projects, and we have worked with demolition contractors over the

years to refine our estimating process for decommissioning studies to align our costs with theirs.

Q. Please describe the Dismantlement Study prepared for FPL.

A. 1898 & Co. was retained to provide a recommendation regarding the total cost, in 2020 dollars, of dismantlement of each FPL- and Gulf-owned generation unit at the end of its useful life, the total cost of dismantlement of the common facilities at these generating plants and the cost to perform environmental remediation activities. The total dismantlement cost, as determined by 1898 & Co. and reflected in the Dismantlement Study, is net of salvage value for scrap materials at each plant. BMcD previously prepared a similar study for FPL in support of FPL's 2016 rate case. This Dismantlement Study serves to update the costs presented in the 2016 study for changes to market conditions, physical changes that have occurred at the Plants, updates to assumptions, and new facilities that have been constructed or acquired since 2016.

Q. What plants did 1898 & Co. evaluate in the Dismantlement Study?

A. For purposes of the Dismantlement Study, we evaluated the following FPL- and Gulf-owned electric generating plants.

FPL Plants		
Cape Canaveral	Manatee Energy Storage	Scherer
Dania Beach	Martin	St. Johns River
Fort Myers	Okeechobee	Turkey Point
Indiantown	Port Everglades	West County
Lauderdale	Riviera Beach	
Manatee	Sanford	
Babcock Preserve Solar	Cape Canaveral (Space Coast)	Echo River Solar
Babcock Ranch Solar	Cattle Ranch Solar	Hammock Solar Hibiscus
Barefoot Bay Solar	Citrus Solar	Horizon
Blue Cypress Solar	Coral Farm Solar	Indian River Solar
Blue Heron Solar (First Citrus)	DeSoto Solar Energy Center	Interstate Solar
Loggerhead Solar	Manatee Solar	Miami Dade
Northern Preserve Solar	Okeechobee Solar	Pioneer Trail
Southfork	Sunshine Gateway	Sweetbay
Twin Lakes Solar	Wildflower	

FPL Proposed Solar Sites		
Egret Solar	Lakeside Solar	Magnolia Springs Solar
Nassau Solar	Trailside Solar	Union Springs Solar
FPL Solar Proxy		

Gulf Plants		
Crist	Daniel	Pea Ridge/Pace Co-Gen
Perdido Landfill Gas to Energy Facility	Scherer	Scholz
Smith	Blue Indigo Solar	Gulf Solar Proxy

Q. What are the FPL and Gulf Solar Proxy facilities and why are they included in the study?

A. The FPL & Gulf Proxy Solar facilities represent solar facilities proposed for years beyond 2020, for which FPL and Gulf did not have site-specific information at the time the dismantlement study was being prepared. Therefore, 1898 & Co. estimated dismantlement costs for a generic solar project with a capacity of 74.5 MW. The estimate is based on 1898 & Co. experience and

includes 325,000 solar panels arranged in a 2x29 configuration. The facility estimate was assumed to have 36 inverters and 36 transformers with buildings on site. Staff from FPL reviewed the resulting generic solar assumptions and agreed that they are reasonable estimates to use as the basis for estimating dismantlement costs for the solar facilities that did not have site specific data at the time the study was prepared. These costs can be applied on a dollar per megawatt basis to future solar projects that are built subsequent to the completion of the study for calculation of dismantlement accruals. Site-specific estimates will then be developed when the study is updated to support future dismantlement accruals.

Q. Were any operational FPL or Gulf generating facilities excluded from the Dismantlement Study?

A. All FPL and Gulf facilities that were in operation at the time of the Dismantlement Study were included.

Q. Please describe your involvement in the preparation of the Dismantlement Study?

A. I served as the 1898 & Co. project manager on the Dismantlement Study. All individuals and parties involved in the preparation of the dismantlement cost estimates in the Dismantlement Study worked under my direction. I was responsible for the overall project, including the development of the dismantlement assumptions, dismantlement estimating methodology, preparation and review of the estimates, and preparation and review of the report.

Q. What was your involvement in the preparation of the prior dismantlement study prepared for FPL?

A. I also served as the project manager on the prior study and testified to the reasonableness of those costs to support their filings in Docket Nos. 160021-EI and 160062-EI.

Q. What approach was used to develop the dismantlement estimates in the Dismantlement Study?

A. The estimates of direct dismantlement costs were prepared with the intent of most accurately representing what 1898 & Co. anticipates contractors would bid to dismantle the equipment, address environmental issues, and restore the site through a competitive bidding process, based on performing known dismantlement tasks under ideal conditions. In addition to these known tasks under ideal conditions, indirect costs were added to cover costs incurred by FPL in executing the projects, and contingency costs were added to account for unknown, but reasonably expected to be incurred, costs.

As outlined in the Dismantlement Study, we prepared these cost estimates by estimating quantities for equipment based on a visual inspection of the facilities, review of engineering drawings, 1898 & Co.'s in-house database of plant equipment quantities, and 1898 & Co.'s professional judgment. This resulted in an estimate of quantities for the tasks required to be performed for each dismantlement effort. Current market pricing was used for labor rates, equipment costs, scrap, and disposal costs specific to the area in which the work

is to be performed. These rates were applied to the quantities for the plants to determine the total cost of dismantlement for each site.

Q. What level of dismantlement and demolition did 1898 & Co. assume was performed at each of the sites?

A. The basis of the 1898 & Co. cost estimates was that all sites will be restored to an industrial condition, suitable for reuse for development of an industrial facility.

Q. What does restoring the sites for industrial use require?

A. The sites will have all above-grade buildings and equipment removed; will have foundations removed to two feet below grade; will be rough graded; and will be seeded. Sites also will have small diameter underground pipes capped and abandoned in place. The sites can remain in this condition in perpetuity, until the sites are specifically redeveloped for industrial use.

Q. Were all of the costs presented in the Dismantlement Study prepared by 1898 & Co.?

A. No. Selected cost items were provided to 1898 & Co. by FPL and Gulf. This includes costs for site inventory balances, asbestos removal, environmental costs, as well as costs for facilities that are currently in the process of being demolished.

III. DESCRIPTION OF DISMANTLEMENT COSTS

Q. Please generally explain the type of costs developed by 1898 & Co. that are reflected in the Dismantlement Study.

A. The cost estimates reflected in the Dismantlement Study are inclusive of direct costs associated with dismantling the plant equipment and facilities and restoring the sites to an industrial-ready condition. The direct costs include environmental remediation costs for asbestos removal and other hazardous material handling and disposal, as well as costs for removing and disposing of contaminated soil around transformers. The Dismantlement Study also includes estimates of indirect costs to be incurred by FPL during dismantlement and contingency costs.

Q. How were the direct costs developed for purposes of the Dismantlement Study?

A. As part of the Dismantlement Study, site-specific cost estimates were developed using a "bottom-up" cost estimating approach, where cost estimates are developed from scratch through the development of site-specific quantity estimates and the application of unit pricing rates to the quantity estimates.

As outlined in the Dismantlement Study, 1898 & Co. prepared these cost estimates by estimating quantities for existing equipment based on visual inspections, review of engineering drawings, review of 1898 & Co.'s in-house database of plant equipment quantities, and applying1898 & Co.'s professional

judgment. This resulted in an estimate of quantities for the tasks required to be performed for each dismantlement effort. Current market pricing for labor rates and equipment were used to develop unit pricing rates for each task. These unit pricing rates were applied to the quantities for the plants to determine the total direct cost of dismantlement for each site. Additionally, unit pricing for scrap values was applied to the scrap quantities to determine anticipated salvage values, which were subtracted from the gross direct costs to arrive at a net project cost in 2020 dollars.

Q. How were scrap values determined?

A. Scrap metal prices used in the development of the scrap credit were based on a review of pricing trends for various types of materials published by American Metal Market, which is an industry-standard publication and information subscription service[1] that reports the prices paid for scrap metals in transactions worldwide.

American Metal Market is the leading independent supplier of market intelligence and pricing to the North American metals industries and publisher of widely used reference prices for scrap. American Metal Market also has extensive experience in reporting scrap prices in a wide range of grades and locations. American Metal Market has been reporting on the U.S. scrap market for more than 100 years, providing benchmark prices to users in the scrap metal industry.

[1] See http://www.amm.com

Q. What is included in the project indirect costs included in the Dismantlement Study?

A. This category includes costs expected to be incurred by FPL during the dismantlement process in addition to the direct costs paid to a demolition contractor. This includes the costs for FPL staff oversight during demolition activities, as well as FPL overheads, and general and administrative costs. Project scope intended to be covered by this category includes obtaining permits; construction services such as water and electricity; security facilities; environmental monitoring; and the costs of construction management, which include scheduling, monitoring and supervising the contractors who will be doing the actual demolition work. It is also intended to cover such additional expenses as the relocation/modification of switch yard facilities where that is necessary.

Q. How were the indirect costs determined?

A. Indirect costs were determined as a percentage of the direct costs, a typical and accepted approach when preparing these types of cost estimates. The percentage of direct costs that was applied to determine the indirect costs was developed by 1898 & Co. based on experience with past dismantlement estimates.

Q. What is included in the contingency costs?

A. A contingency cost includes unspecified but reasonably expected additional costs to be incurred during the execution of dismantlement activities. For any project, there is always some uncertainty associated with work conditions, the

scope of work, and how the work will be performed. There is also some uncertainty associated with estimating the quantities for dismantlement of facilities. These uncertainties result from the age of the plants, limits on drawing availability, and the absence of detailed data for environmental remediation (such as identification of asbestos, lead-based paint, soil testing around transformers, etc.), prior to preparation of these types of studies. Contingency costs account for these unspecified but expected costs and are in addition to the direct costs associated with the base dismantlement known scope items.

Q. Are contingency costs standard industry practice?

A. Yes. The application of contingency is standard industry practice. Even on a project where firm pricing has been agreed upon with a successful bidder, it is typical that a client carry some level of contingency to cover potential change orders. It is even more important to carry contingency on planning-level cost estimates such as those presented in the Dismantlement Study. Inclusion of these costs is consistent with Florida Administrative Code Rule 25-6.04364, Electric Utilities Dismantlement Studies, which includes a provision for contingency costs.

Q. Were any of the costs presented in the Dismantlement Study not developed by 1898 & Co.?

A. Yes. FPL and Gulf are in the process of demolition activities and planning for near-term removal of select units and the environmental remediation of certain ponds and landfills. As part of this process, FPL and Gulf provided 1898 & Co.

with cost estimates internally developed for these activities. For the plants where these activities were occurring or planned in the near term, the cost estimates provided by FPL and Gulf were combined with the cost estimates prepared by 1898 & Co. for the remaining portions of those plants to produce a comprehensive cost estimate for those plants.

Q. Did 1898 & Co. include any other costs in the Dismantlement Study?

A. Yes. In addition to the physical dismantlement and dismantlement scope itself, we also included the expense provided by FPL for remaining inventory balances at the time of retirement. An appropriate credit for potential reuse or resale of remaining inventory was also included.

Q. Did 1898 & Co. apply any cost escalation factor to these estimates?

A. No, we did not. All of the estimates are in year 2020 dollars.

Q. What is your opinion of the reasonableness of the dismantlement cost estimates that 1898 & Co. has prepared for FPL?

A. These estimates were carefully prepared using standard and accepted estimating techniques and the best information available, and they are consistent with our industry experience. Where assumptions were required, I believe they are reasonable and that the estimates that were prepared are reasonably accurate. Further, the inclusion of remaining inventory balance expenses is also reasonable. Maintaining an adequate inventory for the operation and maintenance of the generating units up to their end of life is a prudent and standard operating practice.

IV. CONCLUSION

Q. Are the estimated costs reflected in the Dismantlement Study reasonably reflective of the actual costs necessary to dismantle FPL's plants and expense remaining inventory?

A. Yes, they are.

Q. Are these estimated costs appropriate for use in the development of dismantlement accruals for FPL's electric generating plants?

A. Yes.

Q. Does this conclude your direct testimony?

A. Yes.

(Whereupon, prefiled direct testimony of Ned W. Allis was inserted.)

ERRATA SHEET

WITNESS: **NED W. ALLIS – DIRECT TESTIMONY AND EXHIBIT NWA-1**

PAGE #	**LINE #**	**CHANGE**
Page 26	Lines 11-12	Remove “2016” and insert “2021”; add “s” to “span” and “160021-EI” at the end of sentence
Exhibit NWA-1 Page 762 of 787		In the Discussion, remove “gross” and insert “net” so the sentence reads: “More recent years have experienced less negative net salvage than in the 1980s and 1990s.”

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF NED W. ALLIS

DOCKET NO. 20210015-EI

MARCH 12, 2021

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Ned W. Allis. My business address is 207 Senate Avenue, Camp Hill, PA 17011.

Q. By whom are you employed and what is your position?

A. I am Vice President of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming"). Gannett Fleming, a subsidiary of infrastructure firm Gannett Fleming, Inc., provides depreciation consulting services to utility companies in the United States and Canada.

Q. Please describe your duties and responsibilities in that position.

A. As Vice President, I am responsible for conducting depreciation, valuation and original cost studies, determining service life and salvage estimates, conducting field reviews, presenting recommended depreciation rates to clients, and supporting such rates before state and federal regulatory agencies.

Q. Please describe your educational background and professional experience.

A. I have a Bachelor of Science degree in Mathematics from Lafayette College in Easton, PA. I joined Gannett Fleming in October 2006 as an analyst. My responsibilities included assembling data required for depreciation studies, conducting statistical analyses of service life and net salvage data, calculating annual and accrued depreciation, and assisting in preparing reports and testimony setting forth and defending the results of the studies. I also

developed and maintained Gannett Fleming's proprietary depreciation software. In March of 2013, I was promoted to the position of Supervisor, Depreciation Studies. In March of 2017, I was promoted to Project Manager, Depreciation and Technical Development. In January 2019, I was promoted to my current position of Vice President.

I am a past president of the Society of Depreciation Professionals (the "Society"). The Society has established national standards for depreciation professionals. The Society administers an examination to become certified in this field. I passed the certification exam in September 2011 and was recertified in March 2017. I am also an instructor for depreciation training sponsored by the Society.

I have submitted testimony on depreciation related topics to the Florida Public Service Commission ("FPSC" or "Commission"), the Federal Energy Regulatory Commission ("FERC"), and before the regulatory commissions of the states of New York, Connecticut, Rhode Island, California, the District of Columbia, New Jersey, Kansas, Massachusetts, California, Maryland and Nevada. I have also assisted other witnesses in the preparation of direct and rebuttal testimony in numerous other states and two Canadian provinces. Exhibit NWA-2 provides a list of depreciation cases in which I have submitted testimony.

Q. Have you received any additional education relating to utility plant depreciation?

A. Yes. I have completed the following courses conducted by the Society of Depreciation Professionals: "Depreciation Basics," "Life and Net Salvage Analysis" and "Preparing and Defending a Depreciation Study."

Q. Are you sponsoring or co-sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- NWA-1 – 2021 Depreciation Study
- NWA-2 – List of Cases in which Ned W. Allis has Submitted Testimony
- NWA-3 – Schedules 1A and 1B
- NWA-4 – Summary of Depreciation for Production Plant Resulting from Different Life Span Estimates
- NWA-5 – Summary of Depreciation Based on Current Service Life and Net Salvage Estimates
- NWA-6 – Summary of Depreciation Based on Proposed Service Life Estimates and Current Net Salvage Estimates for Transmission, Distribution and General Plant Accounts
- NWA-7 – Summary of Depreciation Based on Current Service Life Estimates and Proposed Net Salvage Estimates for Transmission, Distribution and General Plant Accounts
- NWA-8 – Summary of Depreciation for Standalone FPL Assets
- NWA-9 – Summary of Depreciation for Standalone Gulf Assets

I am co-sponsoring a portion of the following exhibits where they incorporate information from my testimony or exhibits:

- TCC-9 – Rates for FPL and Gulf as Separate Ratemaking Entities, filed with the direct testimony of FPL witness Cohen.
- KF-3(B) – Proposed Depreciation Company Adjustments by Year for Base vs. Clause for 2022 and 2023 using the RSAM Adjusted Depreciation Rates, filed with the direct testimony of FPL witness Ferguson.

Q. Are you sponsoring any Minimum Filing Requirements ("MFRs") in this case?

A. No.

Q. What is the purpose of your testimony?

A. I am sponsoring the results of a new depreciation study (the "2021 Depreciation Study" or "Study"), filed on behalf of Florida Power & Light Company ("FPL" or the "Company") with the FPSC on March 12, 2021. The 2021 Depreciation Study is Exhibit NWA-1 to my testimony. The Study covers depreciable electric properties in service as of December 31, 2019, and actual and projected plant and reserve balances through the end of 2021.

Q. How will you refer to FPL and Gulf when discussing them in testimony?

A. Operations and time periods after January 1, 2022 are referred to as FPL because Gulf Power Company ("Gulf") will be essentially consolidated into FPL. Therefore, unless otherwise noted, my testimony and references to FPL address the consolidated Company.

Q. Please summarize your testimony.

A. My testimony will explain the methods and procedures of the 2021 Depreciation Study and will set forth the annual depreciation rates that result from the application of this Study, if accepted for use by the Commission. The Study includes comparison schedules showing current and proposed depreciation parameters, including average service lives, net salvage percentages, depreciation rates, depreciation accruals as well as a comparison of the forecasted theoretical reserve to the forecasted book reserve at December 31, 2021. I also provide additional detail on each section of the Study in my testimony.

The overall result of the 2021 Depreciation Study is a net decrease in FPL's depreciation rates over the currently approved rates, which will reduce FPL's total depreciation expense as of December 31, 2021 by approximately $2.4 million. As I detail later in my testimony, this moderate decrease is primarily due to the longer life span for the Turkey Point nuclear plant, which is largely offset by the net impact of service life and net salvage estimates for transmission, distribution and general plant accounts and the plant and reserve activity that has occurred since the last study.

II. 2021 DEPRECIATION STUDY

Q. Please define the concept of depreciation.

A. The FERC Uniform System of Accounts defines depreciation as:

> *Depreciation*, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.[1]

Q. In preparing the 2021 Depreciation Study, did you follow generally accepted practices in the field of depreciation?

A. Yes. The methods, procedures and techniques used in the Study are accepted practices in the field of depreciation and are detailed in my testimony.

Q. Please describe the contents of the 2021 Depreciation Study.

A. The Study is presented in eleven parts:

- Part I, Introduction, presents the scope and basis for the 2021 Depreciation Study;
- Part II, Estimation of Survivor Curves, explains the process of estimating survivor curves and the retirement rate method of life analysis;
- Part III, Service Life Considerations, discusses factors and the informed judgment involved with the estimation of service life;

[1] 18 C.F.R. 101 (FERC Uniform System of Accounts), Definition 12.

- Part IV, Net Salvage Considerations, discusses factors and the informed judgment involved with the estimation of net salvage;
- Part V, Calculation of Annual and Accrued Depreciation, explains the method, procedure and technique used in the calculation of annual depreciation expense and the theoretical reserve;
- Part VI, Results of Study, sets forth the service life estimates, net salvage estimates, annual depreciation rates and accruals and theoretical reserves for each depreciable group. This section also includes a description of the detailed tabulations supporting the 2021 Depreciation Study;
- Part VII, Service Life Statistics, sets forth the survivor curve estimates and original life tables for each plant account and subaccount;
- Part VIII, Net Salvage Statistics, sets forth the net salvage analysis for each plant account and subaccount;
- Part IX, Detailed Depreciation Calculations, sets forth the calculation of average remaining life for each property group;
- Part X, Detail of Generation Plant, provides a description of the Company's generating units and provides a discussion of the considerations that inform the service life and net salvage estimates for each plant account and the probable retirement dates for each generating unit; and
- Part XI, Detail of Transmission, Distribution and General Plant,

provides a description of transmission, distribution and general plant by account and provides a discussion of the considerations that inform the service life and net salvage estimates for each plant account.

Q. Please identify the depreciation method that you used.

A. I used the straight line method of depreciation, remaining life technique, and the average service life (or average service life – broad group) procedure. The annual depreciation accruals presented in my study are based on a method of depreciation accounting that seeks to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of each unit, or group of assets, in a systematic and rational manner.

In compliance with the FPSC depreciation rule prescribed in Rule 25-6.0436, Florida Administrative Code ("F.A.C."), depreciation rates are also presented using the whole life technique in Exhibit NWA-3. Theoretical reserves, which will be discussed in more detail later in my testimony, were calculated using the prospective method of calculating theoretical reserves and compared with the actual book reserves. This comparison is provided in Table 3 of the depreciation study.

Q. Would you please explain the difference between the whole life technique and the remaining life technique?

A. Yes. When using the whole life technique, the cost of an asset (original cost less net salvage) is allocated over the service life of the asset. For a group of

assets, the costs of the assets in the group are allocated over the average service life of the group. However, if the service life or net salvage estimates change, or if activity such as retirements or cost of removal do not occur precisely as forecast, the whole life technique will not recover the full cost of the assets over their service lives without an adjustment to depreciation expense. Note that mathematically if the book reserve is equal to the theoretical reserve then the remaining life depreciation rates would equal the whole life depreciation rates.

The remaining life technique accounts for the fact that estimates can (and will) change over time. For this technique, the remaining undepreciated cost (that is, the original cost less net salvage less the book accumulated depreciation) is allocated over the remaining life of the asset. For a group of assets, the remaining undepreciated costs are allocated over the average remaining life. Thus, when using the remaining life technique there is an automatic adjustment, or self-correcting mechanism, that will increase or decrease depreciation expense to account for any imbalances between the book and theoretical reserves.

Q. Is the remaining life technique the predominant depreciation technique used in the utility industry?

A. Yes. Almost all U.S. jurisdictions, including the FERC, use the remaining life technique.

Q. Did you review prior Commission orders on FPL's depreciation accrual rates?

A. Yes. I performed the previous FPL depreciation study ("2016 Depreciation Study"), which was presented in FPSC Docket No. 160021-EI. I also assisted the depreciation witness that performed the Company's 2009 Depreciation Study, which was presented in FPSC Docket No. 090130-EI, and assisted with the related testimony and attended hearings in that case. I am, therefore, familiar with all depreciation related testimonies in the most recent depreciation dockets and the related settlement agreements and Commission orders.

Q. Is the 2021 Depreciation Study consistent with prior Commission orders?

A. Yes. The use of the straight line method, average service life procedure and remaining life technique is consistent with prior Commission orders. The methods used for the estimation of service lives and net salvage are also generally consistent with prior Commission orders. Each of the methods, procedures and techniques used in the 2021 Depreciation Study is also consistent with those used in the 2016 Depreciation Study and the Company's current depreciation rates.

Q. What are your recommended annual depreciation accrual rates for FPL?

A. My recommended annual depreciation accrual rates are the remaining life rates set forth in Table 1 of Exhibit NWA-1 beginning on page VI-4. These rates were developed using the same methods used in 2016 Depreciation Study and follow the rules of depreciation prescribed by the FPSC previously

discussed.

Q. How did you determine the recommended annual depreciation accrual rates?

A. I did this in two phases. In the first phase, I estimated the service life and net salvage characteristics for each depreciable group - that is, each plant account or subaccount identified as having similar characteristics. In the second phase, I calculated the composite remaining lives and annual depreciation accrual rates based on the service life and net salvage estimates determined in the first phase. The next two sections of my testimony will explain each of these phases of the study.

III. SERVICE LIVES AND NET SALVAGE

Q. Please describe the first phase of the 2021 Depreciation Study, in which you estimated the service life and net salvage characteristics for each depreciable group.

A. The service life and net salvage study consisted of compiling historic data from records related to FPL's plant; analyzing these data to obtain historic trends of survivor and net salvage characteristics; obtaining supplementary information from management and operating personnel concerning accounting and operating practices and plans; and interpreting the above data and the estimates used by other electric utilities to form judgments of average service life and net salvage characteristics.

Q. Did you physically observe FPL's plant and equipment as part of the 2021 Depreciation Study?

A. No. Due to restrictions in place due to COVID-19, I was unable to physically perform site visits for the 2021 Depreciation Study, but because I have previously performed site visits for FPL and numerous other electric utilities, this did not impact my ability to prepare the Study. I performed a number of site visits during the 2009 and 2016 Depreciation Studies. Additionally, for the 2021 Depreciation Study, I held meetings with operating personnel, as I had done in the 2009 and 2016 Depreciation Studies. The meetings and field reviews in these studies were conducted to become familiar with Company operations and obtain an understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements. Meetings were also held with other various personnel from FPL's Power Generation, Nuclear, and Power Delivery business units, as well as meetings with accounting personnel to discuss FPL's assets.

Q. What facilities have you observed?

A. In connection with the preparation of the 2016 Depreciation Study, I visited the following facilities and observed operations and maintenance practices at each location:

- Riviera Beach Energy Center
- Martin Power Plant
- Plumosus Substation

- Landings Substation
- Storm Hardening Project, Belvedere Road, West Palm Beach
- St. Lucie Nuclear Plant
- West County Energy Center
- Jupiter Substation

Additionally, in connection with the preparation of the 2009 Depreciation Study, I toured the following facilities:

- Corporate offices - Juno Beach
- General offices – Miami
- Turkey Point Nuclear Plant
- Turkey Point Power Plant
- Turkey Point Combined Cycle Generating Station
- Lauderdale Combined Cycle and Gas Turbine facilities
- FPL system control center
- Meter technology center

I also attended meetings with FPL personnel during the preparation of both of those studies.

A. Service Lives

Q. What is the process for the estimation of service lives in the 2021 Depreciation Study?

A. The process for the estimation of service lives was based on informed judgment that incorporated a number of factors, including the statistical

analyses of historical data, general knowledge of the property studied, and information obtained from field trips and management meetings. The method of estimation for each depreciable group depended on the type of property studied for each account. "Mass property" refers to assets such as poles, wires and transformers that are continually added and replaced. Depreciable transmission, distribution and general plant assets were studied as mass property. "Life Span property" refers to assets such as power plants for which all assets at a facility are expected to retire concurrently. The processes of estimating service life for mass property and life span property are described in the following sections.

1. Mass Property

Q. What historical data did you analyze for the purpose of estimating service life characteristics for mass property?

A. I analyzed the Company's accounting entries that record plant transactions during the period 1941 through 2019. The transactions included additions, retirements, transfers and the related balances. The Company records also included surviving dollar value by year installed for each plant account as of December 31, 2019.

Q. What methods are generally used to analyze service life data?

A. There are two methods widely used in a typical depreciation study to estimate a survivor curve for a group of plant assets; these are the simulated plant balances method and the retirement rate method.

The simulated plant balance method is used for property groups for which the retirements of property by age are not known. However, it does require continuous records of vintage plant additions and year-end plant balances. The method suggests probable survivor curves for a property group by successively applying a number of alternative survivor curves to the group's historical additions in order to simulate the group's surviving balance over a selected period of time. One of the several survivor curves which results in simulated balances that conform most closely to the book balance may be considered to be the survivor curve which the group under study is experiencing.

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. It is the preferred method when sufficient data are available. The method relates to property groups for which aged accounting experience is available or for which aged accounting experience is developed by statistically aging unaged amounts. FPL maintains aged accounting data (meaning that the vintage year is recorded for each addition, retirement or transfer), and thus the data at FPL are kept in a manner that enabled the use of the retirement rate method.

The application of the retirement rate method is illustrated through the use of an example in Part II of the 2021 Depreciation Study. The retirement rate

method was used for mass property accounts (i.e., depreciable transmission, distribution and general plant accounts). As I will discuss in the next section on life span property, the retirement rate method was also used for the estimation of interim survivor curves for production plant accounts.

Q. Did you use statistical survivor characteristics to estimate average service lives of the property?

A. Yes. I used Iowa-type survivor curves.

Q. What is an "Iowa-type survivor curve," and how did you use such curves to estimate the service life characteristics for each property group?

A. Iowa-type curves are a widely used group of generalized survivor curves that contain the range of survivor characteristics usually experienced by utilities and other industrial companies. The Iowa curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observing and classifying the ages at which various types of property used by utilities and other industrial companies had been retired.

Iowa-type curves are used to smooth and extrapolate original survivor curves determined by the retirement rate method. Iowa curves were used in this study to describe the forecasted rates of retirement based on the observed rates of retirement and expectations regarding future retirements. Iowa-type curves have been accepted by every state commission and the FERC.

The estimated survivor curve designations for each depreciable property

group indicate the average service life, the family within the Iowa system to which the property group belongs, and the relative height of the mode. For example, an Iowa 40-R2 designation indicates an average service life of forty years; a right-moded, or R-type curve (the mode occurs after average life for right-moded curves); and a moderate height, two, for the mode (possible modes for R-type curves range from 1 to 5).[2] The Iowa curves are discussed in more detail in Part II of Exhibit NWA-1.

Q. How are Iowa-type survivor curves compared to the historical data for the purpose of forecasting service lives?

A. For each depreciable property group, original life tables are developed from the Company's historical records of aged additions, transfers and retirements. Original life tables can be developed using the full experience of historical data. Original life tables can also be developed using different ranges of years of activity, such as the most recent 30 or 40 years of experience. The range of transaction years used to develop a life table is referred to as an "experience band," and the range of vintages used for the life table is referred to as a "placement band."

Once life tables have been developed using the retirement rate method, specific Iowa curves can be compared both visually and mathematically to the life tables. For visual curve matching, Iowa survivor curves are plotted on the same graph as an original life table, and the points of the curves are visually

[2] There are also half-mode curves (e.g., R1.5) that are the average of the full mode curves.

compared to the life table to assess how closely the Iowa curve matches the historical data. For mathematical curve matching, Iowa curves are compared to an original life table mathematically using an algorithm that compares the differences between an Iowa curve and the original life table.

For both visual and mathematical curve matching, not all of the historical data points should be given the same consideration, as different data points on a life table will have different significance based on both the level of exposures (i.e., the amount of assets that has survived to a given age) and the level of retirements. For example, data points for later ages in an original life table may be based on the experience of a small number of units of property. Due to a smaller sample size, these data points would not provide as meaningful information compared to earlier ages. Additionally, the middle portion of the curve is where the largest portion of retirements occurs. This portion of the curve therefore typically provides the best indications of the survivor characteristics of the property studied.

Q. Can you provide an example of the process of fitting Iowa curves to an original life table?

A. Yes. Account 364.1 Poles, Towers and Fixtures – Wood provides a good example of this process. For this account, the life table for the overall experience and placement bands is shown on Exhibit NWA-1, pages VII-111 and VII-112. The original life table develops the percent of plant that has survived to each age for the experience and placement bands. The

representative data points from this life table are depicted graphically on Exhibit NWA-1, page VII-110.

Also shown on page VII-110 is the 40-R2 survivor curve. As can be seen in the chart, this curve is a visually good match of the historical data, as the smooth line depicting the 40-R2 survivor curve is close to the historical data points for most ages. It is a particularly good fit for the middle portion of the curve, or the data points from about 80% surviving to about 20% surviving. These data points provide the most information on the survivor characteristics for this account. The 40-R2 is also a good mathematical fit of the historical data. The degree of mathematical fit can be measured by the residual measure,[3] which is a normalized sum of squares difference between the original life table and a given Iowa curve. The residual measure for the 40-R2 survivor curve and the representative data points from the original life table is 1.41, which is considered to be a very good fit.[4] The statistical analysis for this account, using both visual and mathematical techniques, therefore indicates that the 40-R2 survivor curve provides a good representation of the historical mortality characteristics for the account.

Q. Is the statistical analysis of historical data based on the retirement rate method the only consideration in estimating service life?

A. No. The estimation of service life is a forecast of the future experience of

[3] The residual measure is the square root of the total sum of the squares of differences between points on the original and smooth curves divided by the number of points.

[4] The smaller the residual measure, the more closely the Iowa curve mathematically matches the original life table.

property currently in service, and therefore informed judgment that incorporates a number of factors must be used in the process of estimating service life. The statistical analysis can provide a good indication of what has occurred for the Company's assets in the past, but other factors can affect the service lives of the assets going forward. Further, the historical data often does not provide a definitive indication of service life. For these reasons other factors must be considered when estimating future service life characteristics.

Q. Would you provide an example of types of factors considered in the process of estimating service life?

A. Yes. An example is Account 364, Poles, Towers and Fixtures. I have explained previously that the 40-R2 survivor curve is a good fit of the historical data for wood poles. However, other factors were also considered for this account.

In the 2016 Depreciation Study, Account 364 was subdivided into subaccounts for wood poles and concrete poles. For the 2021 Depreciation Study, data was available to perform separate retirement rate analyses on historical data for wood poles and concrete poles. As noted previously, the statistical analyses indicated service lives of around 40 years for wood poles, and that the 40-R2 survivor curve was a good fit of the historical data. For concrete poles, the statistical analysis indicated a similar service life to that of wood poles.

In addition to the statistical analysis, I have had discussions with engineering and operations personnel with knowledge of the assets and Company plans in both this study and previous studies. Through these discussions I have obtained more detail about the Company's storm hardening program wherein FPL is investing to make its transmission and distribution infrastructure more resilient. Additionally, in connection with the 2016 Depreciation Study I visited the job site of a storm hardening project to see the installation of a stronger new concrete pole. Based on these discussions and observations and my experience in the industry, I concluded that the service life expectations for wood poles were likely to be different than the expectations for concrete poles.

For wood poles, discussions with management indicated that the results from the statistical analysis provide a reasonable indication of the future service life expectations for this account. However, information obtained from discussions with management and site visits provided reason to expect that newer concrete poles will remain in service for a somewhat longer period of time than older concrete poles have historically remained in service. Concrete poles installed today are stronger poles than those installed 30 or 40 years ago. Retirements due to causes such as damage and deterioration should therefore be expected to occur somewhat less frequently for newer concrete poles. However, poles are also retired for other reasons, such as relocations, loading and clearances, which may not be materially different in the future than what

has been experienced in the past. Thus, the future expectations for concrete poles are for somewhat longer service lives than have occurred historically. The 50-R1.5 survivor curve, which is the same estimate as recommended in the 2016 Depreciation Study, incorporates these expectations and represents a longer service life than the indications based solely on the historical data.

Q. Was the process for estimating service lives for other accounts similar to Account 364?

A. Yes. A similar process for estimating service life was used for other mass property accounts. The estimated survivor curves for each account can be found in Part VII of the 2021 Depreciation Study. A narrative description of considerations for each estimate can be found in Part XI of the study.

2. Life Span Property

Q. What method was used to estimate the lives of production facilities?

A. For production facilities the life span method was used to estimate the lives of electric generation facilities, for which concurrent retirement of the entire facility is anticipated. In this method, the survivor characteristics of such facilities are described by the use of interim retirement survivor curves (typically Iowa curves) and economic recovery dates. The interim survivor curve describes the rate of retirement related to the replacement of elements of the facility. For a power plant, examples of interim retirements include the retirement of piping, boiler tubes, condensers, turbine blades, and rotors that occur during the life of the facility. Interim survivor curves were developed

using the retirement rate method in a manner similar to that used for mass property. The economic recovery date, an estimate of the probable retirement date of a facility based on its anticipated operating life, affects each year of installation for the facility by truncating the interim survivor curve for each installation year at its attained age as of that date. The life span of the facility is the time from when the plant is originally placed in service to the expected date of its eventual retirement (*i.e.*, the economic recovery date).

The use of interim survivor curves, truncated at the estimated economic recovery dates, provides a consistent method of estimating the lives of several years' installation for a particular facility inasmuch as a single concurrent retirement for all the years of installation will occur at that specified date.

Q. Has the life span method been previously used in Florida?

A. Yes. The life span method was approved by the Commission for the Company's depreciation rates in Docket No. 090130-EI and was also used in the 2016 Depreciation Study.

Q. Is the life span method widely used in the electric industry to determine the depreciation rates for production plants?

A. Yes. My firm has used the life span method in performing depreciation studies presented to many public utility commissions across the United States and Canada, and the life span method is the predominant method used for property such as production plants.

Q. Are interim survivor curves the most common method of estimating interim retirements for life span property?

A. Yes. The use of interim survivor curves to estimate interim retirements is also the predominant method of estimating interim retirements for assets such as power plants. Interim survivor curves were used in the 2016 Depreciation Study and for the Company's current depreciation rates.

Q. What are the economic recovery dates, and what was the basis for each selection?

A. The economic recovery dates estimated in the study are set forth on Exhibit NWA-1 on pages III-6 and III-7. For most generating units, the life span used in the 2016 Depreciation Study is either the same as or longer than the life span ordered by the Commission in Docket No. 090130-EI.

The economic recovery dates are based on a number of factors, including the operating characteristics of the facilities, the type of technology used at each plant, environmental and other regulations, and the Company's outlook for each facility. Economic recovery dates are specific to each generating unit, and, therefore, the characteristics for each generating unit are considered when estimating an economic recovery date. Typically the owner and operator of each facility best understands the operation and the outlook of each power plant, and is therefore in the best position to determine the most probable retirement of each facility. I have discussed the estimated life span of each facility with FPL. In addition, FPL has retired a number of generating units in

recent years. The experienced life spans of these retired facilities were also reviewed. I have also incorporated my firm's experience performing depreciation studies for other utilities and our knowledge of other generating facilities. I have compared the estimates for FPL's facilities with the estimates typically made for other utilities and have confirmed that FPL's estimates are reasonable and are within the range of estimates typically used in the industry.

This process results in economic recovery dates for the 2021 Depreciation Study that are in my judgment the most reasonable based on the current information available. Further discussion of these estimates can be found in Part X of Exhibit NWA-1, as well as later in this testimony.

Q. What are the life span estimates for steam generating plants?

A. Each of the standalone FPL steam production plants either have been or are planned to be retired. The remaining standalone Gulf steam production plants are Scherer Unit 3, a coal-fired unit, and the Gulf Clean Energy Center (formerly known as Plant Crist), a plant whose units were previously coal-fired or dual fuel and were converted to natural gas in 2020.[5] In recent years the combination of lower-cost alternative generation, such as natural gas-fired combined cycle and solar plants, and a variety of environmental rules have had an impact on the service lives of steam power plants, and in particular on

[5] As discussed in the testimony of FPL witness Ferguson, the costs of many of the retired and planned to be retired plants are included in Capital Recovery Schedules. FPL witness Ferguson also addresses the Daniel plant, for which the Company's share is planned to be retired by 2024.

coal-fired generation. Many power plants in the industry have been retired earlier than anticipated due in part to these environmental rules. For the Gulf Clean Energy Center units, the recommended life spans are the same as those currently used, which includes retirements of the smaller and less efficient Units 4 and 5 by 2025. For Scherer Unit 3, the recommended life span is five-years shorter than the current estimate but is consistent with the life span currently used by the plant's co-owner, Georgia Power. Overall, the life spans of these units are as long as or longer than the experienced life spans of steam power plants that have been retired by FPL and Gulf in recent years.

Q. Has the Company retired any steam generating plants in recent years?

A. Yes. The Company has retired a number of steam generating plants. The facilities retired, as well as the retirement date and life span of each facility, are summarized in Table 1 below. The actual experienced life spans for these units ranged from 30 to 62 years, with an average life span of less than 50 years. This experience supports a conclusion that the life spans for the remaining coal-fired plants are not unreasonably long but also supports that reducing the life span for Scherer Unit 3 is more consistent with the Company's experience.

Table 1: Retirements of FPL Steam Generating Units

Generating Unit	Retirement Date	Actual Life Span
Cape Canaveral Unit 1	2010	45
Cape Canaveral Unit 2	2010	41

Cutler Unit 5	2012	58
Cutler Unit 6	2012	57
Lansing Smith Unit 1	2016	51
Lansing Smith Unit 2	2016	49
Martin Unit 1	2018	38
Martin Unit 2	2018	37
Manatee Unit 1	2022	46
Manatee Unit 2	2022	45
Pt Everglades Unit 1	2012	52
Pt Everglades Unit 2	2012	51
Pt Everglades Unit 3	2013	49
Pt Everglades Unit 4	2013	48
Riviera Unit 3	2011	49
Riviera Unit 4	2011	48
Sanford Unit 3	2012	53
Scholz Unit 1	2015	62
Scholz Unit 2	2015	62
SJRPP Unit 1	2018	31
SJRPP Unit 2	2018	30
Scherer Unit 4	1989	33
Turkey Point Unit 1	2016	49
Turkey Point Unit 2	2013	45

Q. What are the estimated life spans for the Company's nuclear generating facilities?

A. The life spans for the Turkey Point and St. Lucie nuclear units are based on the facilities' Nuclear Regulatory Commission ("NRC") operating licenses. Each unit has been granted a 20-year extension to its original 40-year license, and the Turkey Point units have been granted a subsequent license renewal. The estimated life spans for the Turkey Point units are 80 years and for the St. Lucie Units are 60 years.

Q. What is the life span estimate for the Company's combined cycle generating facilities?

A. The life span estimate for the combined cycle facilities is 40 years. This is the

same life span as is currently used for the Company's combined cycle generation. In the 2016 Depreciation Study, the life spans for FPL's combined cycle plants were increased from 30 years to 40 years, which reflected significant investments in the combined cycle fleets to extend the lives of many components, improve efficiency, and mitigate corrosion issues.

Q. How does a 40-year life span estimate compare to the range of estimates by others in the industry for combined cycle power plants?

A. A 40-year life span is consistent with the estimates of other utilities and is within the range of life span estimates used in the industry for these types of facilities.

Q. What are the life span estimates for other facilities?

A. The 2021 Depreciation Study uses the same 40-year life span for most of the Company's new and existing peaker facilities. The currently approved 30-year life span is recommended for the Company's solar facilities, with the exception of the Martin Solar facility. The Martin solar plant is a thermal power plant that generates steam used in the steam cycle for the Martin Unit 8 combined cycle plant. Because this facility is integrated with the combined cycle plant, the same economic recovery date is used as for Martin Unit 8.

Q. In addition to the life spans proposed in the depreciation study, have you performed any additional calculations for nuclear, combined cycle and solar plants?

A. Yes. At the request of FPL witness Ferguson, I have calculated the resultant depreciation if the life spans for the St. Lucie units were increased to 80 years,

the life spans of combined cycle plants were increased to 50 years, and the life spans of solar facilities were increased to 35 years. The results of these calculations are provided in Exhibit NWA-4.

Q. In addition to the life span, you also have recommended estimates for interim retirements. Is the estimation of interim retirements using the retirement rate method similar to the process of estimating survivor curves for mass property?

A. Yes. Similar to mass property the interim survivor curve estimates are based on informed judgment that incorporates actuarial analyses of historical data using the retirement rate method of analysis. Iowa survivor curves have been estimated for each plant account which, combined with the life span estimate for each generating unit, provide the overall survivor curve, average service life and average remaining life for each plant account at each generating unit. A narrative discussion of the considerations for the estimation of interim survivor curves for each account can be found in Part X of the 2021 Depreciation Study. Graphical depictions of the interim survivor curves estimated for each generation plant account are presented in Part VII of the study.

Q. Were the Company's current depreciation rates developed with interim survivor curves?

A. Yes. In the 2009 Depreciation Study, the approved depreciation rates used a slightly different methodology referred to as "interim retirement rates." While the interim retirement rate methodology also estimates interim retirements, it

is based on the assumption that an equal rate of retirements will occur in each year of a plant's operation. An assumption of an equal rate of annual retirements is often not a realistic assumption for interim retirements for power plants. As a result, the use of interim survivor curves is a more accurate method of estimating interim retirements and was used in the 2016 Depreciation Study. The current depreciation rates also use interim survivor curves, and the recommendation in the 2021 Depreciation Study is to continue to use interim survivor curves.

Q. Why is the use of interim survivor curves more accurate for estimating interim retirements?

A. Interim survivor curves are more accurate because they recognize the concept of dispersion. That is, survivor curves recognize that retirements will occur at different rates at different ages. For a power plant, retirements often tend to increase as the assets in the plant age, because wear and tear over time results in more assets needing to be replaced. Thus, the rate of retirement should be expected to increase over time for most types of assets. Interim survivor curves recognize this dispersion, while the interim retirement rate methodology does not.

Q. How do the interim survivor curve estimates compare to those used for the current depreciation rates?

A. Generally, for many accounts the interim survivor curve estimates reflect similar or longer lives than those used in the current depreciation rates. As with the current depreciation rates, Account 343, Prime Movers is subdivided

into subaccounts to reflect the shorter service lives for assets referred to as "capital spare parts." The term capital spare parts, as is used for FPL's combined cycle plants, refers to a number of different types of assets associated with the combustion turbines for the plant. Capital spare parts include turbine blades, rotor blades and transition nozzles that typically have a shorter life than the overall facility. During outages at regular intervals many of these components are replaced. The parts removed from the plant can be refurbished and reused within FPL's combined cycle fleet. When capital spare parts are removed from a plant, the Company records a retirement as well as positive net salvage that reflects the fact that the parts can be refurbished and reused. Refurbished parts are then recapitalized when they return to service. Most capital spare parts are typically refurbished and reused two times before they are no longer able to be used.

As a result of these operational characteristics, capital spare parts on average have a shorter service life than the entire facility but also have a positive net salvage value when retired. It should also be noted that there is a range of lives for the Company's capital spare parts, with some assets having lives as short as two to three years while others remain in service ten years or longer.

Q. In addition to the statistical life analysis, are there other considerations for the service life estimate for capital spare parts in the current study?

A. Yes. FPL has made, and continues to make, significant investments to upgrade its capital spare parts. For instance, the original parts installed for the

Company's General Electric ("GE") plants, which are referred to as 7FA.03 parts, experienced shorter service lives than is expected for new parts installed today. One reason for the shorter service lives is that some of FPL's plants experienced corrosion issues with many of their components. Another reason is that manufacturers have developed more robust components (e.g., for GE plants these are referred to as 7FA.04 and 7FA.05 parts) that have longer intervals between outages. The result of the longer intervals should be an increase in service life for those capital spare parts.

For these reasons, the expectation is that the service life of capital spare parts will be longer going forward than is indicated in the historical data. In the 2016 depreciation study, the data indicated an average service life in the 6- to 7-year range but a 9-year average service life was recommended. The historical data continues to indicate an average service life for these assets in the 6- to 7-year range, but because a relatively short period of time has passed since the last study and the Company has continued with upgrades during that time, I continue to expect that in the future these assets will have lives that are longer than indicated by the historical data. Accordingly, the 9-L0 survivor curve is recommended for interim retirements for capital spare parts. This estimate reflects the impact of upgraded components, as well as the impact of fewer run-hours for some of the Company's combined cycle plants.

B. Net Salvage

Q. Would you please explain the concept of "net salvage"?

A. Net salvage is the salvage value received for the asset upon retirement less the cost to retire the asset. When the cost to retire exceeds the salvage value, the result is negative net salvage. Net salvage is a component of the service value of capital assets that is recovered through depreciation rates. The service value of an asset is its original cost less its net salvage. Thus, net salvage is considered to be a component of the cost of an asset that is recovered through depreciation.

Inasmuch as depreciation expense is the loss in service value of an asset during a defined period (e.g., one year), it must include a ratable portion of both the original cost and the net salvage. That is, the net salvage related to an asset should be incorporated in the cost of service during the same period as its original cost, so that customers receiving service from the asset pay rates that include a portion of both elements of the asset's service value, the original cost and the net salvage value.

For example, the full recovery of the service value of a $1,000 transformer may include not only the $1,000 of original cost, but also, on average, $300 to remove the transformer at the end of its life less $150 in salvage value. In this example, the net salvage component is negative $150 ($150 - $300), and the net salvage percentage is negative 15% (($150 - $300)/$1,000).

Q. Please describe the process you used to estimate net salvage percentages.

A. The net salvage estimate for each plant account is based on informed judgment that incorporates the analysis of historical net salvage data. I reviewed net salvage data from 1986 through 2019. Cost of removal and salvage were expressed as a percent of the original cost of the plant retired, both on an annual basis and a three-year moving average basis. The most recent five-year average was also calculated.

Q. Were there other considerations used in developing your final estimates for net salvage?

A. Yes. In addition to the statistical analyses of historical data, I considered the information provided to me by the Company's operating personnel, general knowledge and experience of the industry practices, and trends in the industry in general.

Q. Is the same process used for the estimation of net salvage for production plant?

A. The same process is used for interim net salvage for generating plant accounts as is used for the estimation of net salvage for mass property accounts. However, interim net salvage is applied only to the portion of plant expected to be retired as interim retirements. Assets expected to remain in service until the final retirement of a generating facility will experience terminal net salvage – that is, the cost to dismantle the facility.

Q. Do the depreciation rates used for electric generating facilities have a component for dismantlement?

A. No. The dismantlement component of net salvage is not included in the depreciation rates recommended in the 2021 Depreciation Study. Consistent with the longstanding practice of FPL, and as approved by the FPSC, the Company has made estimates of final dismantlement for their fossil and solar generation facilities as well as the Manatee Energy Storage Center, but these costs are handled separately and are not part of the 2021 Depreciation Study. Fossil and solar generation dismantlement costs are included separately in this docket, in Exhibit KF-5 sponsored by FPL witness Ferguson. End of life costs for nuclear units are also addressed separately, in decommissioning studies. FPL filed its most recent nuclear decommissioning study with the FPSC in December 2020. Therefore, net salvage estimates for fossil, solar and nuclear production facilities provided in this Study only reflect interim retirement activity.

Q. How do the net salvage estimates in the 2021 Depreciation Study compare to the previous study?

A. The net salvage estimates are generally fairly similar to those in the 2016 Depreciation Study, although they are more negative for some accounts than those used for the current depreciation rates (which are based on a settlement). The most recent depreciation studies have reflected a general trend to higher cost of removal for certain accounts, a trend that is reflected in the Company's historical net salvage data.

Q. In addition to a trend to higher cost of removal being reflected in the historical data, what are the reasons for this trend?

A. Costs have increased for a number of reasons, including permitting costs, work requirements, environmental regulations, safety requirements, traffic control and labor and contractor costs. In addition to discussing these factors with Company personnel, I have physically observed a pole replacement project during the field trip conducted for the 2016 Depreciation Study. I observed the work involved in replacing a concrete pole, including the construction crew, equipment, traffic control and work required to complete the replacement project. Discussions with management and observations in the field confirm that there are significant costs to retire assets and that these costs have been increasing.

Q. Can you provide an example of how costs have increased?

A. Yes. Distribution poles provide a good example of factors that have resulted in increasing costs to retire assets. FPL has both wood and concrete distribution poles. The retirement of a wood pole requires a multiple person crew as well as equipment, including a pole truck. For concrete poles, additional equipment, such as a crane, is typically required. In addition to the replacement of the actual pole, the Company must also transfer the primary and secondary cable, as well as other devices, from the old pole to the new pole.

Costs for retiring poles have increased for a number of reasons. Labor and contractor costs have increased over time. The cost of cutting poles has also

increased. Cutting costs are higher for concrete poles, as cutting a concrete pole requires more effort than for a wood pole. Other factors have also contributed to higher project costs. For example, work requirements and permitting requirements have resulted in higher project costs.

Each of the factors described here contribute to higher cost of removal going forward than was the case many years ago. This trend is consistent with the historical net salvage data, which indicates increasing cost of removal for distribution poles.

Q. Is the trend to higher cost of removal consistent with the experience of other utilities in the industry?

A. Yes. My firm conducts depreciation studies for utilities across the country. The trend towards increasing cost of removal is consistent with the experience of many others in the industry. The reasons that FPL's costs have increased are also experienced by other utilities.

IV. REMAINING LIVES AND DEPRECIATION RATES

Q. Please describe the second phase of the 2021 Depreciation Study, in which you calculated composite remaining lives and annual depreciation accrual rates.

A. After I estimated the service life and determined net salvage characteristics to use for each depreciable property group, I calculated the annual depreciation

accrual rates for each group based on the straight line remaining life method, using remaining lives weighted consistent with the average life procedure. The study used actual plant and reserve balances as of December 31, 2019. Actual plant and reserve activity through September 30, 2020, estimated plant and reserve for the remainder of 2020, and estimated activity for 2021 were then used to develop depreciation rates based on plant and reserve balances as of December 31, 2021.

Q. Please describe the straight line remaining life method of depreciation.

A. The straight line remaining life method (also referred to as the straight line method and remaining life technique) of depreciation allocates the original cost of the property, less accumulated depreciation, less future net salvage, in equal amounts to each year of remaining service life.

Q. Please describe the average service life procedure for calculating remaining life accrual rates.

A. The average service life procedure defines the group for which the remaining life annual accrual is determined. When using this procedure, the annual accrual rate is determined for the entire group or account based on its average remaining life, and this rate is applied to the surviving balance of the group's cost. The average remaining life for the group is determined by first calculating the average remaining life for each vintage of plant within the group. The average remaining life for each vintage is derived from the area under the survivor curve between the attained age of the vintage and the maximum age. Then, the average remaining life for the group is determined

by calculating the dollar-weighted average of the calculated remaining lives for each vintage. The annual depreciation accruals for the group are calculated by dividing the remaining depreciation accruals (original cost less accumulated depreciation less net salvage) by the average remaining life for the group.

Q. Have you used the same method to calculate the average remaining life as used in the previous study filed in Docket No. 160021-EI?

A. Yes. The same method of calculating average remaining lives is used in the 2021 Depreciation Study as was used in the 2016 Depreciation Study and the Company's current depreciation rates.

Q. Please use an example to illustrate the development of the annual depreciation accrual rate for a particular group of property in the 2021 Depreciation Study.

A. For purposes of illustrating this process I will use Account 368, Line Transformers. The survivor curve estimate for this account is the 40-R0.5, and the net salvage estimate is for negative 15 percent net salvage. A discussion of these estimates, as well as the statistical analyses that support the estimates for this account, can be found on Exhibit NWA-1, pages XI-42 and XI-43.

The calculation of the annual depreciation related to the original cost of Account 368, Line Transformers, as of December 31, 2021, is presented on Exhibit NWA-1, page VI-18. The calculation is based on the 40-R0.5

survivor curve, negative 15 percent net salvage, the attained age, and the book reserve. The calculated annual depreciation accrual and rate are based on the estimated survivor curve and net salvage, the original cost, book reserve, future accruals and composite remaining life for the account. The calculation of the composite remaining life as of December 31, 2021 is provided in the tabulations presented on Exhibit NWA-1, pages IX-249 through IX-251. The tabulation sets forth the installation year, the original cost, the average service life, the whole life annual depreciation rate and accruals, the remaining life and theoretical future accruals factor and amounts. The average service life weighted composite remaining life of 31.88 years is equal to the total theoretical future accruals divided by the total whole life depreciation accruals.

Q. Did you use this same methodology for the general plant accounts?

A. Yes. This methodology was used for the general plant accounts that are depreciated. However, most of the general plant accounts are amortized in accordance with amortization periods prescribed by the FPSC.

Q. What are the overall results of the 2021 Depreciation Study?

A. The Study results in an increase in service lives for many accounts when compared to the 2016 Depreciation Study, although because the current depreciation rates are based on a settlement, the service lives for some accounts are shorter than those used for the current depreciation rates. Most of the life spans for production accounts are the same as in the previous study, with the most notable exception being the longer life span for the Turkey

Point nuclear units due to the subsequent NRC license renewal.

The 2021 Depreciation Study resulted in similar estimates of negative net salvage as the prior study, although this represents more negative net salvage estimates for some accounts when compared to those used for the current depreciation rates.

The Study results in a moderate decrease of total company depreciation expense of approximately $2.4 million as of December 31, 2021. This decrease is primarily the result of the extension of the life span for the Turkey Point nuclear plant, offset to some degree by estimates for transmission, distribution and general plant accounts as well as the impact of plant and reserve activity since the last depreciation study.

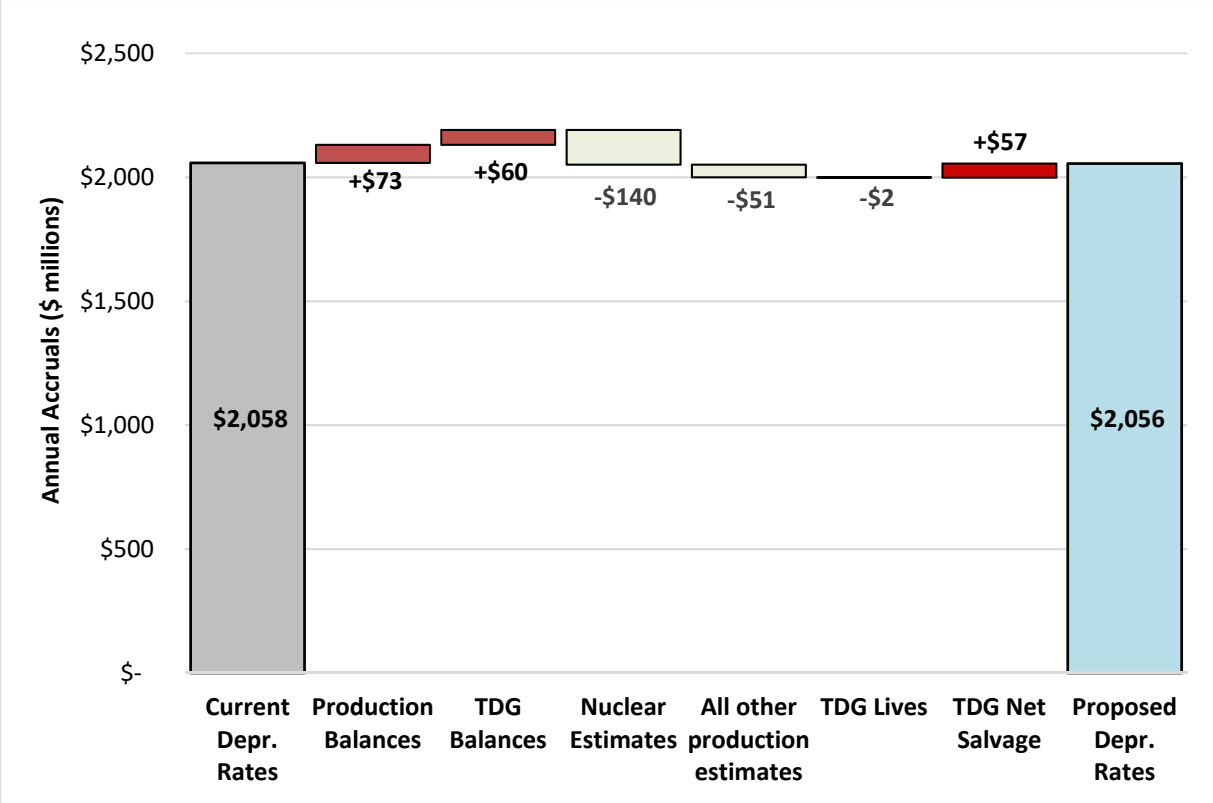
V. FACTORS AFFECTING DEPRECIATION EXPENSE

Q. What are the major factors that affect the depreciation expense resulting from application of the 2016 Depreciation Study?

A. The changes in annual depreciation rates and expense are shown in Table 2 of the 2021 Depreciation Study and result in a moderate decrease in depreciation expense of approximately $2.4 million as of December 31, 2021. The overall decrease is primarily the result of changes in plant and reserve balances since the last depreciation study. Overall, the service life estimates in the study

result in a net decrease in depreciation expense, which is partially offset by more negative net salvage estimates for certain accounts. Figure 1 below provides an illustration of the main factors that result in the increase in expense.[6]

Figure 1: Factors Resulting in Changes to Depreciation Expense as of December 31, 2021



Production Balances: Updating the depreciation calculations to December 31, 2021 using FPL and Gulf's current service life and net salvage estimates results in a net increase in depreciation for production plant accounts of approximately $73 million. This is primarily the result of capital additions and retirements at various power plants.

[6] The calculations supporting Figure 1 have been provided in Exhibits NWA-5 through NWA-7.

Transmission, Distribution and General Plant Balances: Updating the depreciation calculations to December 31, 2021 using FPL's current service life and net salvage estimates results in an increase in depreciation of approximately $60 million. This is the result of plant and reserve activity since the last depreciation study.

Nuclear Plant Estimates: The recommended changes to service lives and net salvage for nuclear production plant accounts result in a net decrease in depreciation expense of approximately $140 million. This is primarily the result of the longer life spans for the Turkey Point nuclear units that result from the subsequent license renewals.

All other production plant estimates: For the non-nuclear production functions, the service life and net salvage estimates result in a net decrease in depreciation expense of approximately $51 million.

Transmission, Distribution and General Plant Service Lives: The recommended service lives for these classes of plant in the 2021 Depreciation Study produce a relatively small net change in depreciation expense. For some accounts a longer service life is recommended, for some a shorter service life is recommended and for others the same estimate is recommended. In total, the recommended service lives produce a net decrease in depreciation expense of approximately $2 million.

Transmission, Distribution and General Plant Net Salvage: The recommended net salvage estimates for these classes of plant result in a net increase in depreciation expense of approximately $57 million. As discussed previously, the net salvage estimates are generally consistent with (and in some cases less negative than) the estimates from the 2016 Depreciation Study and reflect a trend of increasing cost of removal for certain accounts.

VI. THEORETICAL RESERVE IMBALANCE

Q. What is the book reserve?

A. The book reserve, also referred to as the "book accumulated depreciation" or the "accumulated provision for depreciation," is a running total of historical depreciation activity. It is equal to the historical depreciation accruals, less retirements and cost of removal, plus historical gross salvage. The book reserve also represents a reduction to the original cost of plant when calculating rate base.

Q. What is the theoretical reserve?

A. The theoretical reserve is an estimate of the accumulated depreciation based on the current plant balances and depreciation parameters (service life and net salvage estimates) at a specific point in time. It is equal to the portion of the depreciable cost of plant that will not be allocated to expense through future whole life depreciation accruals based on the current forecasts of service life and net salvage. The theoretical reserve is also referred to as the "Calculated

Accrued Depreciation" or "CAD."

Q. What is a theoretical reserve imbalance?

A. A theoretical reserve imbalance ("TRI" or "imbalance") is calculated as the difference between a company's book accumulated depreciation, or book reserve, and the calculated accrued depreciation, or theoretical reserve. I should note that in prior proceedings in both Florida and other jurisdictions, different terms have been used for the theoretical reserve imbalance, including "theoretical reserve variance," "reserve excess," "reserve surplus" or "reserve deficit" and "theoretical excess depreciation reserve." For this testimony I will use the term "theoretical reserve imbalance," which is consistent with the terminology used in the National Association of Regulatory Utility Commissioners' ("NARUC") publication, *Public Utility Depreciation Practices.*

Q. Pursuant to Commission orders in previous rate cases, there have been amortizations of the theoretical reserve imbalances during the periods following those orders. How has the impact of those amortizations been incorporated into the 2021 Depreciation Study?

A. In total, the amortizations resulting from previous cases have resulted in a reduction to accumulated depreciation. The calculations as of December 31, 2021 include the adjustments to accumulated depreciation from each of these cases that have been or are projected to be recorded as of that date.

Q. Is the theoretical reserve the "correct" reserve?

A. No. The terms "correct" or "incorrect" and the precision or exactness that

they imply have no application in this context; rather, the theoretical reserve is an estimate at a given point in time based on the current plant balances and current life and net salvage estimates. It can provide a benchmark of a Company's reserve position, but it should not be thought of as the "correct" reserve amount.

In Wolf and Fitch's *Depreciation Systems*, this point is explained as follows on page 86:

> The CAD is not a precise measurement. It is based on a model that only approximates the complex chain of events that occur in an actual property group and depends upon forecasts of future life and salvage. ***Thus, it serves as a guide to, not a prescription for, adjustments to the accumulated provision for depreciation***. (emphasis added.)

Q. How is the TRI addressed in the 2021 Depreciation Study?

A. The 2016 Depreciation Study uses the remaining life technique. When using remaining life technique, there is an automatic adjustment, or self-correcting mechanism, that will increase or decrease depreciation expense to account for any imbalances between the book and theoretical reserves. This is the most common approach to addressing theoretical reserve imbalances.

Q. What is the theoretical reserve imbalance, based on the estimates from the current study and plant and reserve balances as of December 31, 2021?

A. The 2021 Depreciation Study estimates a negative theoretical reserve imbalance of approximately $437 million. That is, the book reserve is approximately $437 million less than the estimated theoretical reserve. While

$437 million may seem like a large number without context, this amount is relatively small in terms of a theoretical reserve imbalance. The $437 million represents less than 3% of the calculated theoretical reserve of approximately $15.0 billion as of December 31, 2021 and is an even smaller percentage when compared to the $63.5 billion in original cost of plant in service as of the same date. Given that the 2021 Depreciation Study is the forecast of events that will occur over many decades, a difference of less than 3% between the book and theoretical reserves should be considered a minor difference.

Q. Does this conclude your direct testimony?

A. Yes.

(Transcript continues in sequence in Volume 4.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, DEBRA KRICK, Court Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 21st day of September, 2021.

DEBRA R. KRICK
NOTARY PUBLIC
COMMISSION #HH31926
EXPIRES AUGUST 13, 2024