DUKE ENERGY FLORIDA

Dianne M. Triplett
DEPUTY GENERAL COUNSEL

April 2, 2024

**VIA ELECTRONIC FILING**

Mr. Adam J. Teitzman, Commission Clerk
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket 20240025-EI, Petition for Rate Increase by Duke Energy Florida, LLC

Dear Mr. Teitzman,

Attached for filing on behalf of Duke Energy Florida, LLC's ("DEF") in the above-referenced docket is the Direct Testimony of Ed Scott and Exhibit No. ELS-1

Thank you for your assistance in this matter. Please feel free to call me at (727) 820-4692 should you have any questions concerning this filing.

(Document 22 of 40)

Respectfully,

*/s/ Dianne M. Triplett*

Dianne M. Triplett

DMT/mw

Attachment

299 First Avenue North (33701) ▪ St. Petersburg, Florida
Phone: 727.820.4692 ▪ Email: dianne.triplett@duke-energy.com

**CERTIFICATE OF SERVICE**
*Docket No. 20240025-EI*

**I HEREBY CERTIFY** that a true and correct copy of the foregoing has been furnished by electronic mail this 2nd day of April, 2024, to the following:

*/s/ Dianne M. Triplett*
Dianne M. Triplett

| | |
|---|---|
| Jennifer Crawford / Major Thompson / Shaw Stiller<br>Office of General Counsel<br>Florida Public Service Commission<br>2540 Shumard Oak Blvd.<br>Tallahassee, FL 32399-0850<br>JCrawfor@psc.state.fl.us<br>MThompso@psc.state.fl.us<br>SStiller@psc.state.fl.us | Walt Trierweiler / Charles J. Rehwinkel / Mary Wessling / Austin Watrous<br>Office of Public Counsel<br>111 W. Madison St., Rm 812<br>Tallahassee, FL 32399<br>rehwinkel.charles@leg.state.fl.us<br>trierweiler.walt@leg.state.fl.us<br>watrous.austin@leg.state.fl.us<br>wessling.mary@leg.state.fl.us |
| Jon C. Moyle, Jr.<br>Karen A. Putnal<br>Moyle Law Firm, P.A.<br>118 North Gadsden Street<br>Tallahassee, Florida 32301<br>jmoyle@moylelaw.com<br>kputnal@moylelaw.com | Bradley Marshall<br>Jordan Luebkemann<br>Earthjustice<br>111 S. Martin Luther King Jr. Blvd.<br>Tallahassee, Florida 32301<br>bmarshall@earthjustice.org<br>jluebkemann@earthjustice.org |

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

| | |
|---|---|
| **In re: Petition for rate increase by Duke Energy Florida, LLC** | **Docket No. 20240025-EI**<br><br>**Submitted for filing: April 2, 2024** |

# DIRECT TESTIMONY

# OF

# EDWARD L. SCOTT

**On behalf of Duke Energy Florida, LLC**

**I. Introduction and Summary**

**Q. Please state your name and business address.**

A. My name is Edward L. Scott. My business address is 6565 38th Avenue North, St. Petersburg, Florida 33710.

**Q. By whom are you employed and in what capacity?**

A. I am employed by Duke Energy Florida, LLC ("DEF" or "the Company") as General Manager of System Operations, Florida. DEF is a subsidiary of Duke Energy Corporation ("Duke Energy").

**Q. What are the duties and responsibilities of your position with DEF?**

A. As General Manager of System Operations, I am responsible for the safe, reliable, economic, and regulatory compliant operation of the DEF power system. This is done by overseeing the real time electric system operations of DEF, including generation dispatch, transmission reliability, and transmission service transactions. I also serve as Vice Chair on the Florida Reliability Coordinating Council ("FRCC") Operating Committee.

**Q. Please describe your educational background and professional qualifications.**

A. I earned Bachelor of Science and Master of Science degrees in electrical engineering from the Florida Institute of Technology in 1998 and 1999, respectively. I also earned a Master of Science in Business Administration from the

University of Florida in 2007. I am a licensed Professional Engineer in Florida and North Carolina. I have been with the Company, and its predecessor companies, since 2001 in positions of increasing responsibility. Before my current role as General Manager of System Operations at the Florida Energy Control Center, I was Director of Transmission Planning for DEF and was responsible for all transmission planning activities. In this role, I was involved in many areas of the DEF's transmission system, including its design, construction, operation, and maintenance to provide reliable transmission service to the Company's retail and wholesale customers. I was also responsible for ensuring that long-range transmission plans, studies, and assessments were performed in accordance with all applicable Federal Energy Regulatory Commission ("FERC"), North American Electric Reliability Corporation ("NERC"), FRCC, and Duke Energy planning standards and requirements. I developed Generation and Transmission Integrated Siting Strategies, supervised the evaluation of Generator Interconnection Requests, and represented DEF on the FRCC Planning Committee. Additionally, I held prior leadership roles for the Company as Manager of System Operations, Manager of Bulk Transmission Planning, and Supervisor of System Operations. I also held several Company engineering positions with increasing responsibilities in Operations Engineering, Operations Planning, and Operations Training. Prior to joining the Company, I was a staff engineer and compliance manager with the FRCC.

**Q. Have you previously testified before the Florida Public Service Commission ("FPSC")?**

A. Yes. In 2015, I gave direct transmission testimony in Docket No. 20150043-EI in support of the Company's Generation Base Rate Adjustment ("GBRA"). In 2014, I filed direct testimony in Docket No. 20140110-EI (Citrus County Combined Cycle Power Plant Need Petition) and Docket No. 20140111-EI (Suwannee Project and Hines Chillers Power Uprate Need Petition) describing transmission system impacts.

**Q. What is the purpose of your direct testimony?**

A. My testimony supports the Company's requested transmission capital and Operations & Maintenance ("O&M") expense for the test years applicable to this proceeding, namely, the projected 12-month periods ending December 31, 2025, 2026, and 2027. The requested transmission capital and O&M expense included in this case is set out in Table 1, below:

**Table 1**

| | **2025** | **2026** | **2027** | **2025-2027 Total** |
|---|---|---|---|---|
| Capital | $503.8 M | $416.2 M | $407.3 M | $ 1,327.2 M* |
| O&M | $31.5 M | $32.7 M | $33.8 M | $98 M |

** 2025-2027 Total may not foot due to rounding.*

These investments are necessary so DEF can meet the requirements of customer

and load growth in an increasingly stringent regulatory environment, particularly pertaining to system reliability. These are some of the major challenges the Company now faces and will continue to face in the future. DEF must meet these challenges to continue providing safe and reliable electric services to its customers, which is the main goal of its transmission system.

**Q. How is your testimony organized?**

A. In Section I, in addition to information regarding my background and expertise, I have discussed the purpose of my testimony, including an overview of the Company's requested transmission expense over the test years applicable to this case, the Minimum Filing Requirement ("MFR") schedules I co-sponsor in support of the Company's request, and a summary of my testimony.

In Section II, I describe DEF's transmission system and provide background information regarding the Company's previous base rate case and transmission investment since that case.

In Section III, I discuss the operational performance of DEF's transmission system, and specifically the improvement in reliability metrics experienced by the Company over the last several years, which is evidence of DEF's investment in the system. I also discuss the practices, procedures, and controls utilized by DEF to ensure the cost effectiveness of the Company's transmission investments.

In Section IV of my testimony, I describe DEF's transmission capital and O&M expenditure requests in this case.

Finally, in Section V, I provide some concluding remarks, and note that the Company's transmission expenditure requests are prudent, reasonable, and necessary to provide service to our customers.

Q. **Are you presenting any exhibits with your testimony?**

A. Yes, I have prepared or supervised the preparation of the Exhibit ELS-1, a summary of co-sponsored schedules of the Company's MFRs. This exhibit is true and correct to the best of my knowledge, subject to being updated during the course of this proceeding.

**Q. Please provide a summary of your testimony.**

A. My testimony presents the Company's requested transmission capital and O&M expense for the test years applicable to this proceeding (2025-2027) and demonstrates that the requested investments are needed to provide safe and reliable transmission service to DEF's customers. These investments are necessary so that DEF can meet the challenges facing the Company, now and in the future – including customer growth, load growth, and increasingly stringent regulatory requirements regarding reliability.

In outlining the Company's response to these challenges and supporting its transmission funding request, my testimony further demonstrates that DEF's past transmission investments have proven to be effective, as evidenced by the consistent improvement in its reliability metrics under standard industry-wide measures. In addition, my testimony details the extensive long-term strategic planning and cost management practices in which the Company engages. These practices and procedures show the Company's commitment to strengthening the transmission grid and increasing system reliability in a manner that has proven to be cost effective, demonstrating DEF's customer focus and excellent stewardship.

## II. Background – A Description of DEF's Transmission System, and Transmission Investment since the 2021 Settlement Agreement

**Q. Please generally describe the Company's transmission system.**

A. The Company's transmission system includes approximately 5,300 circuit miles of transmission lines, which includes 500 kV, 230 kV, 115 kV and 69 kV lines. The Transmission system has more than 520 transmission substations and over 49,500 towers, poles and other related equipment and material that support a peak load of approximately 13,000 MWs. These assets deliver electric service to almost 2.0 million retail customers located throughout a 20,000 square mile area in densely populated areas around Orlando, St. Petersburg, and Clearwater, as well as rural north Florida, and west central Florida.

DEF's transmission system is part of the Florida interconnected power grid that enables utilities to exchange power. Within Florida, the Company's system is extensively networked and interconnected with other investor-owned utilities, municipal electric utilities, and rural electric cooperatives.

In addition to power lines and substations, the system includes various other equipment and facilities such as control houses, computers, structures, transformers, regulators, capacitors, breakers, communication devices, and protective relays. Together, these assets provide the Company with considerable operational flexibility with its transmission system and allow DEF to provide safe and reliable power to DEF's customers.

**Q. How is the Company organized to manage its transmission system?**

A. DEF manages its transmission system both locally and regionally with multiple shared support and service organizations. The Company maintains local control over transmission line and substation field, design engineering, project management, work management, construction, maintenance, and restoration activities. This organizational structure allows the Company to provide quick and responsive support in each region and fosters a sense of local ownership while leveraging shared services and support, where appropriate, to provide safe and reliable power to the Company's customers in Florida.

**Q. Were transmission system investments addressed in connection with the 2021 Settlement Agreement?**

A. Yes. I understand that DEF entered into a comprehensive settlement agreement with key consumer groups, approved by the FPSC in 2021, which I will refer to as the 2021 Settlement Agreement. My understanding is that the settlement facilitated base rate investment in many areas, including transmission investments to maintain reliability and meet the ongoing needs of the transmission system. The settlement also confirmed the transfer of costs previously recovered through base rates to the Storm Protection Plan ("SPP") cost recovery clause. This clause and related items are described in detail in the testimony of Company witness Brian Lloyd.

**Q. Are DEF's capital and O&M expenditure requests in this case duplicative of any activities taken or that will be taken in connection with SPP requirements?**

A. No. The expenditure requests in this case are entirely separate from any funds requested through the SPP and its cost recovery clause.

**Q. With DEF now recovering certain costs through the SPP cost recovery clause, why does the Company need an increase in base rates?**

A. The principal purpose of the Company's SPP investments is to systematically harden the system to better withstand the range of extreme weather conditions expected to impact Florida. But even apart from SPP expenditures focused upon weather conditions, Florida is experiencing significant economic development, and

the Company is focused on making sure it is appropriately investing in the DEF transmission system and upgrading its infrastructure to meet this ever-growing demand. In addition, the transmission system investments that are the subject of DEF's request in this case are focused upon compliance with increasingly stringent regulatory standards and renewables integration into the grid, separate and apart from the Company's SPP requests. By maintaining and improving its transmission system, the Company reliably delivers power from generation resources to be distributed to customers' homes and businesses.

**Q. Has DEF invested in its transmission system since the 2021 Settlement Agreement?**

A. Yes, absolutely. Approximately $1.67 billion in capital has been invested from 2021-2023 in the DEF transmission system, and we project an additional investment of $578.4 million will occur during 2024. Since January of 2021, major transmission projects completed/energized during this timeframe include 108 miles of new lines, 97 miles of rebuilt lines, 16 new switching stations/substations, and interconnections of 14 new solar generation sites. The payoff has included significant improvement in the system's reliability, as measured by standard industry reliability metrics, as I discuss in the next section of my testimony. As I also discuss, these improvements have been accompanied by prudent and responsible management of operational and capital expenditures for our customers' benefit.

## III. Operational Performance of the DEF Transmission System and Practices, Procedures, and Controls to Ensure Cost Effectiveness of Transmission Investments

**Q. How have the transmission investments that the Company has made over the past several years impacted the operational performance of its transmission system?**

A. As detailed further below, the trend line of the principal reliability metrics DEF utilizes to measure transmission system reliability has shown consistent improvement over the past six years, with the statistics showing that 2023 reflects the Company's best performance over this period. In addition, the testimony of DEF witness Brian Lloyd demonstrates that the reliability of the Company's Distribution function has also improved over this time period, an improvement that necessarily also reflects improvement in our transmission system reliability metrics.

Moreover, as further detailed below, the Company engages in extensive long-term strategic planning (including processes to identify optimal capital investment) and cost management practices. The procedures DEF has in place indicate not only the Company's commitment to strengthen the transmission grid and enhance the operation of our system, but also to do so in a manner that demonstrates we are being good stewards of the funds entrusted to us. Overall, the Company has seen positive reliability performance, which demonstrates DEF's overall commitment to system reliability and operational excellence in an efficient, safe, and cost-effective

manner, ultimately benefiting our customers.

**Q. What reliability metrics does the Company use to measure the reliability of its transmission system?**

A. The Company utilizes reliability data to assess and track the performance of its transmission system using standard indices generally accepted in the electric utility industry. The principal metrics are:

- *Grid SAIDI – System Average Interruption Duration Index.*

  Grid SAIDI reflects the average number of minutes each customer was without power during a given time period, typically annually. It is determined by taking the sum of Grid CMI (customer-minutes of interruption) during all events[1] and dividing by the total number of grid customers served on DEF's system, as follows:

$$Grid\ SAIDI = \frac{\sum t_i N_i}{N_{total}} = \frac{Grid\ CMI}{\#\ of\ Grid\ Customers\ Served}$$

  $Where$:

  $t_i$: $Duration\ of\ Interruption\ in\ Minutes$

  $N_i$: $Number\ of\ Customers\ Impacted$

  $N_{total}$: $Total\ Number\ of\ Customers$

  The Company includes DEF's total customer base, both retail and

[1] Standard industry practice excludes certain outages and events from the calculation of Grid SAIDI scores, such as interruptions caused by defined "Major Events." Major Events so defined include but not limited to hurricanes and other tropical cyclones named by the National Weather Service ("NWS"); winds 75 mph or greater confirmed by the NWS; extreme weather events; and icing beyond design parameters.

wholesale customers, in this metric. For Grid SAIDI, a lower number of customer minutes interrupted indicates better performance, and a downwards trend over several years indicates continuous reliability improvement.

- *OHMY-SA – Outages per Hundred Miles per Year – Sustained Automatic.* OHMY-SA measures the number of transmission line sustained outages[2] that are incurred per hundred circuit miles per year, as follows:

$$OHMY - SA\ Rate = \frac{\#\ of\ SA\ Outages\ on\ \geq 100kV\ Lines}{100\ miles}$$

Sustained is defined as any outage of one or more minutes in duration. This is a transmission industry standard performance measure applicable to circuits 100 kV and greater. Just like for Grid SAIDI, for OHMY-SA a lower rate, or lower the number of sustained outages, indicates better performance, and a downwards trend over several years indicates reliability improvement.

**Q. How has DEF's transmission system performed against these metrics?**

A. As Figures 1 and 2 show, DEF's transmission system performance has demonstrated continuous improvement since 2018 with Grid SAIDI, improving by 50%, and OHMY-SA improving by 14%:

[2] Similar to Grid SAIDI, standard industry practice excludes certain outage events from the calculation.

**Figure 1**

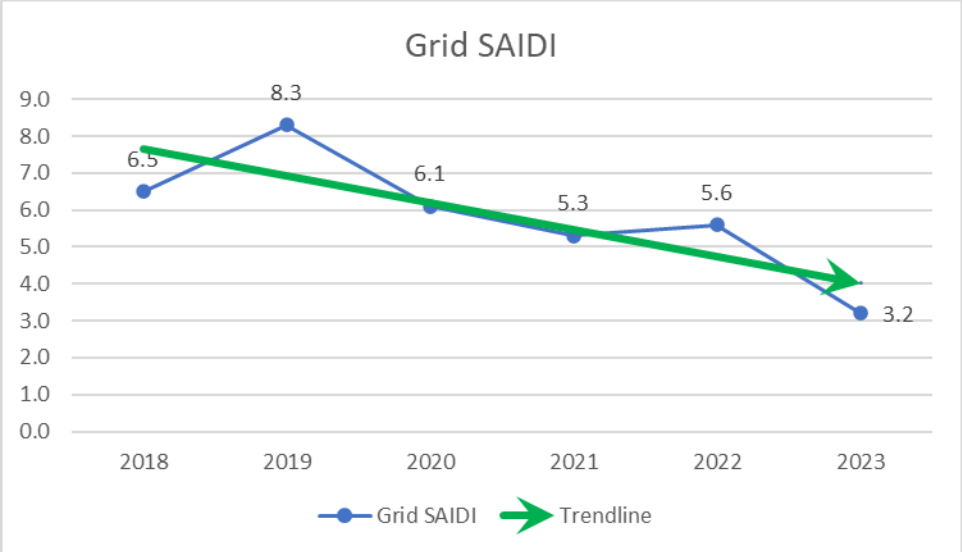
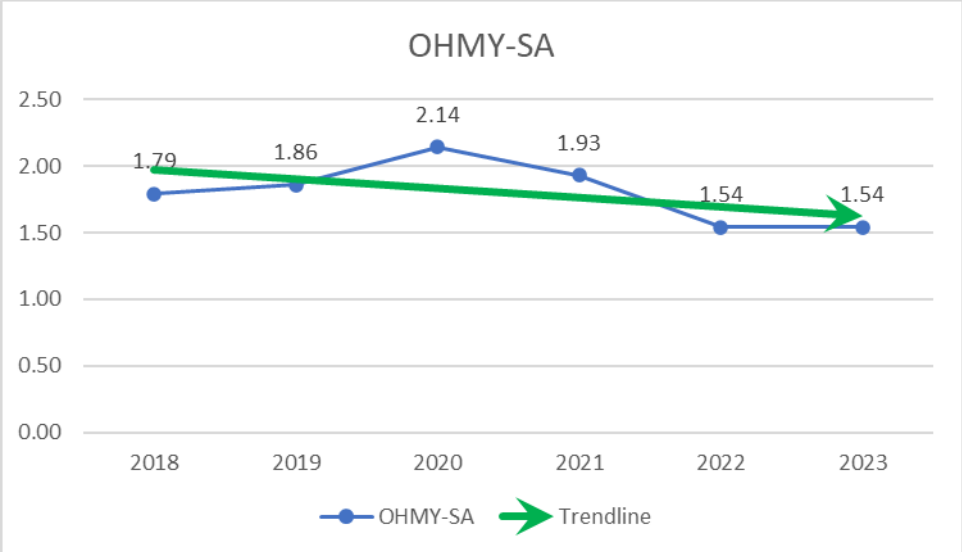



**Figure 2**




**Q. What factors drive the results measured by the Grid SAIDI and OHMY-SA metrics?**

A. The main drivers of Grid SAIDI and OHMY-SA performance are transmission line

equipment, animal, and breaker events. DEF plans to invest approximately $280M to address such events throughout years 2025-2027.

**Q. How does DEF ensure that funds are prudently allocated to the improvement of the transmission system?**

A. DEF has processes in place to ensure prudent use of funds allocated to the transmission system. These processes combine long-term planning and asset evaluation along with robust cost and project management, demonstrating the Company's commitment to prudent and cost-effective stewardship of funds allocated to the transmission system.

**Q. How does the Company determine the capital investments that are needed for continued positive reliability performance?**

A. DEF performs annual evaluations to determine capital investment needs. The Company's transmission planning function annually analyzes the 10-year long-term capital investment plan based upon NERC, FRCC, and FERC regulations and standards. These assessments help the Company in its long-term transmission planning efforts, as the regulatory standards drive decisions regarding the Company's ability to meet reliability requirements. Likewise, DEF's transmission asset management function annually utilizes system reliability performance and asset assessment results to determine long term capital investments needs. I provide additional detail with respect to these processes below.

**Q. Please elaborate on the annual transmission planning process.**

A. Each calendar year, DEF's Transmission Planning group performs analyses for the long-term, ten-year transmission planning cycle. These analyses are performed from three distinct planning perspectives. First, Transmission Planning must demonstrate that the DEF system will be in compliance for the ten-year planning period with the mandatory and enforceable NERC Reliability Standards, particularly NERC Reliability Standard TPL-001. If the analysis shows that the DEF system deviates from these standards, the Company must initiate either an operational mitigation strategy or a new transmission capital project to bring the system back in compliance with the standards. Second, analysis is performed to demonstrate transmission system compliance with FRCC reliability standards. This analysis is similar to the analysis performed to ensure system compliance with the NERC Reliability Standards, the primary difference between the two analyses being that the FRCC treats the 69 kV system as if it is part of the Bulk Electric System (normally 100 kV and higher voltage facilities). Third, additional analysis is performed to address the interconnection of generation, transmission, and end-user facilities. This includes new residential and commercial loads that require capital expansion of DEF's existing transmission system. Proposed transmission capital investment projects resulting from these analyses must, per DEF's transmission planning process, be reviewed by other DEF departments and work groups affected by the proposals for feasibility and implementation. Projects are

then added to the overall Transmission long term capital plan.

**Q. Please elaborate on the annual asset management evaluation process.**

A. DEF's Transmission Asset Management group annually analyzes long-term system and asset performance to identify proactive asset investment projects. The analysis includes tracking and trending of reliability metric data and review of ongoing health monitoring system data. In addition, Asset Management identifies crucial asset or system performance deficiencies from asset/system outages and other current data that require emergent projects or urgent site-specific reliability projects. Lastly, the group proposes capital investment projects which are prioritized based on risks. Asset Management prioritization includes health analysis of assets, reliability metrics, customer impact, environmental impact, regulatory compliance, field & engineering expertise, and industry standards. Asset Management leadership then reviews the prioritization, approves the project, and adds them to the overall Transmission long term capital plan.

**Q. How do customers benefit from these long-term planning and assessment processes?**

A. DEF's annual capital investment identification process, both with respect to long-term transmission planning and also transmission asset evaluation, ensures that replacement of the aging infrastructure, strengthening the transmission grid and enhancing the operation of DEF's transmission system is done on a periodic basis.

This process ensures that capital investments continue to be evaluated using up-to-date information and reliability trends and is kept within NERC and FRCC regulatory standards and requirements. This results in continued improved reliability and operational performance for our customers.

**Q. How has the Company provided a reliable transmission system to customers at reasonable cost?**

A. DEF has proven to be a good steward of capital and O&M funds while continuing to improve the reliability of the transmission system consistent with customer needs and expectations. The Company continually incorporates processes, procedures, and practices to manage and control transmission-related capital and O&M costs. While certainly not an exhaustive list of implemented cost savings and/or efficiency enhancements, here are several examples of applicable practices:

- The establishment of an enterprise-wide Project Management Center of Excellence ("PMCoE") in 2014, followed by additional transmission project governance and oversight implementation, which further enhanced the Company's performance in project planning, execution, and effective cost control.
- The utilization of internal crews where feasible and utilizing contract strategies—such as estimate comparisons against internal estimates, competitive bid events, and bundled bid awards to drive cost savings.
- Capital project funding requests are scrutinized by multiple approvers to

ensure cost estimates are in line with comparable projects and have sufficient business justification.

- Transmission system engineering projects employ a comprehensive design review process across the various engineering disciplines that ensures an in-depth review of the project design at various points in the project life cycle (Conceptual Design/Final Design/As Built). The process requires review and sign-off from key stakeholders before the design packages are released for construction resulting in the most efficient design with a high degree of quality, maintainability, and constructability.

## IV. DEF's Transmission Request

**Q. What is the Company's transmission capital expenditure request in this case?**

A. The transmission capital request included in this case is set out in Table 2, below:

**Table 2**

| | 2025 | 2026 | 2027 | 2025-2027 Total |
|---|---|---|---|---|
| Capital | $503.8 M | $416.2 M | $407.3 M | $ 1,327.2 M* |

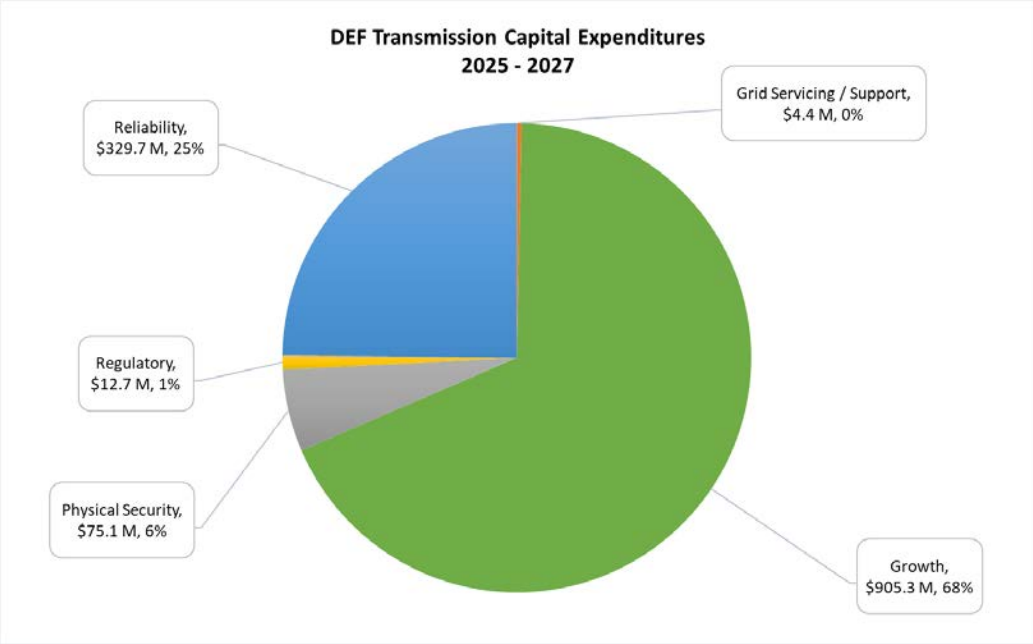
** 2025-2027 Total may not foot due to rounding.*

**Q. What segments of transmission capital expenditure are included in the Company's request?**

A. Transmission capital investments are organized into five major categories: (1)

Growth, (2) Reliability, (3) Physical Security, (4) Regulatory, and (5) Grid Servicing/Support. Figure 3 below illustrates the major categories of the transmission system's 2025-27 $1.3 billion capital expenditure request:

**Figure 3**




**Q. Please provide additional detail of the Transmission Growth investment request.**

A. As Figure 3 shows, approximately two-thirds of DEF's transmission capital expenditure requirements for 2025-2027 are allocated to the Growth category. Growth and system expansion include new service accounts, new major construction projects, and increased electrical demand in an area, all of which affect planning and operations on the transmission system. In planning for growth, DEF Transmission Planning uses load forecast data published in the annual DEF Ten Year Site Plan. Increased load due to new customers and/or increased customer

usage/demand in certain areas requires additional infrastructure and/or installation of new facilities.

**Q. Earlier in your testimony you indicate that the reliability standards the Company must meet are becoming increasingly stringent. Please elaborate.**

A. I previously described in my testimony the interaction between transmission planning and NERC and FRCC reliability standards – briefly, the Company's Transmission Planning group performs an annual evaluation to demonstrate the transmission system's compliance with these standards over a ten-year planning horizon and identifies deviation from these standards. Any deviation must be addressed, either by operational changes or additional transmission investment. Much of the request allocated to the growth category is dedicated to projects identified by these NERC and FRCC reliability standards analyses.

In particular, the NERC reliability standard TPL-001 has undergone increasingly prescriptive modifications that directly relate to our request for 2025 and beyond. These TPL-001 revisions include mandatory performance requirements, which in most cases must be accomplished through the implementation of transmission capital projects such as new or upgraded 500 kV, 230 kV, and 115 kV lines and substations. An example of one such capital project is a new 230/115 kV Substation and two new associated 230 kV lines that are projected to be in service during the 2025-2027 time period. During certain system conditions, the 230kV lines will

offload major power corridors while providing system voltage and stability support to our Bulk Electric System (BES) under various NERC TPL-001 contingencies. Furthermore, the new 230kV lines will enhance the reliability for the rapid load growth of a major residential developer in the Central Florida area. The lines will also provide additional significant grid benefits, such as providing transmission capacity for potential solar and other inverter-based resource interconnections.

**Q. In addition to the need to meet expected growth, what other factors drive anticipated investment in DEF's transmission system during the test year periods?**

A. Another important transmission investment category is Reliability, making up approximately one-fourth of DEF's transmission capital expenditure requirements for 2025-27, as shown in Figure 3 above. The primary investment focus here is around transmission asset health reliability to ensure outage reductions and improve restoration times. The factors that drive spending in this category include animal event mitigation; and replacement of obsolete, aging, and worn infrastructure.

*Animal Events*

Since 2018, numerous outages were caused by animals contacting energized equipment inside DEF substations. Fencing upgrades and installation of industry best practice animal mitigation guards offer the best deterrent to animal outages.

*Obsolete Assets*

Relay protection systems are designed to detect and isolate faulty elements on a

system, thereby limiting the severity and spread of system disturbances, and preventing possible damage to protected elements. Industry retirement of older relay communication equipment is pushing a need to upgrade the relay communication technology to current standards. Upgrading to modern relay designs with communication capabilities and microprocessor-based technologies enables quicker restoration from outage events.

*Aging and worn infrastructure*

Transformers are monitored to determine the thermal, electrical, chemical, and mechanical stresses. The combination of all these stresses contribute to the deterioration of the condition of a transformer. Critical power transformers in poor condition can fail and result in costly unplanned outages. Proactive replacement of aging transformers before they fail ensures reliable customer service.

**Q. You mentioned Physical Security is one of the categories of investment. Please explain further.**

A. Based on recent incidents targeting energy infrastructure at DEF, as well as other utilities nationwide, the Company's Transmission Physical Security program focuses on hardening substations and implementing additional security to detect and deter against physical attacks.

**Q. In addition to transmission capital expenditures, does the Company's request also include transmission O&M expenses?**

A. Yes. Table 3 describes the categories of O&M expense included in DEF's transmission request:

**Table 3**

| O&M Categories | 2025 | 2026 | 2027 | 2025-2027 Total | Category Includes |
|---|---|---|---|---|---|
| Inspection and Maintenance | $9.8 M | $10.2 M | $10.6 M | $30.7 M* | Transmission substation and line inspections, maintenance, and repairs |
| System Operations | $6.9 M | $7.1 M | $7.3 M | $21.3 M | Energy Control Center desk operators, outage coordinators, and operations engineers |
| Industry Fees | $5.2 M | $5.4 M | $5.6 M | $16.2 M | NERC, SERC and FRCC annual dues |
| Other | $3.7 M | $3.9 M | $4.1 M | $11.8 M* | Safety materials, small tools, EPRI Dues and utility payments |
| Technology | $3.1 M | $3.1 M | $3.1 M | $9.3 M | IT hardware & software maintenance and license renewals |
| Training | $1.4 M | $1.5 M | $1.5 M | $4.4 M | Safety, compliance, general crew training |
| Environmental | $0.7 M | $0.7 M | $0.8 M | $2.2 M | Maintenance of oil spill protection, waste disposal and environmental clean-up |
| Compliance | $0.7 M | $0.7 M | $0.8 M | $2.2 M | Oversight of compliance to NERC standards |
| **Total** | **$31.5 M** | **$32.7 M** | **$33.8 M** | **$98.0 M** | |

** 2025-2027 Total may not foot due to rounding.*

**Q. What maintenance activities are necessary to maintain a reliable transmission system for DEF's customers?**

A. Key transmission system reliability activities include facility and system inspections, targeted maintenance as a result of those inspections, and asset evaluations. Facility and system inspections include activities such as conducting ground and aerial patrols of lines, relay and battery testing and calibration, breaker assessment and testing, station infrared inspections, transformer diagnostic testing, and routine station inspections. During routine station inspections, the Company's maintenance crews are tasked to correct deficiencies found in our system while onsite as well as address and report back any discovered discrepancies. Transmission uses prediction analytic tools to monitor asset health and perform ongoing asset evaluations to ensure asset health deterioration is addressed before failure.

**Q. Are the Company's transmission O&M requests within the FPSC O&M benchmark costs?**

**A.** Yes, this is shown in MFR C-37.

**Q. What are the projections for the Company's transmission O&M costs per customer 2025 through 2027?**

A. As shown in MFR C-33, transmission expenses are projected to be $15.50, $15.77, and $16.06 per customer in 2025, 2026, and 2027, respectively.

## V. Conclusion

**Q. Are the Company's required transmission-related capital and O&M expense requests reasonable and necessary?**

A. Yes. These requests (both capital and O&M) are needed to provide reliable transmission service to the Company's customers, meet expected growth, comply with mandatory NERC, FRCC, and FERC reliability standards. Furthermore, the requests aid in the implementation of the Company's transition to cleaner energy generation. DEF has a track record of improving system reliability through cost effective transmission investments. As such the transmission funding requests in this case are prudent, reasonable, and necessary.

**Q. Does this conclude your direct testimony?**

A. Yes, it does.

**List of MFRs Sponsored or Co-Sponsored**

| MFR | Schedule Name |
|---|---|
| B-7 | Plant Balances by Account and Sub-Account |
| B-8 | Monthly Plant Balances Test Year - 13 Months |
| B-9 | Depreciation Reserve Balances by Account and Sub-Account |
| B-10 | Monthly Reserve Balances Test Year - 13 Months |
| B-11 | Capital Additions and Retirements |
| B-13 | CWIP |
| C-6 | Budgeted versus Actual Operating Revenue and Expenses |
| C-8 | Details of Changes in Expenses |
| C-9 | Five Year Analysis - Change in Cost |
| C-15 | Industry Association Dues |
| C-16 | Outside Professional Services |
| C-33 | Performance Indices |
| C-34 | Statistical Information |
| C-35 | Payroll and Fringe Benefit Increases Compared to CPI |
| C-36 | Non-Fuel Operation and Maintenance Expense Compared to CPI |
| C-37 | O&M Benchmark Comparison by Function |
| C-41 | O&M Benchmark Variance by Function |
| C-43 | Security Costs |