

FILED 5/14/2025 DOCUMENT NO. 03613-2025 FPSC - COMMISSION CLERK

Attorneys and Counselors at Law 123 South Calhoun Street P.O. Box 391 32302 Tallahassee, FL 32301

P: (850) 224-9115 F: (850) 222-7560

ausley.com

May 14, 2025

### **VIA: ELECTRONIC FILING**

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

> Re: Storm Protection Plan Cost Recovery Clause FPSC Docket No. 20250010-EI

Dear Mr. Teitzman:

Attached for filing in the above referenced docket is Tampa Electric Company's Notice of Substitution of Witness.

Thank you for your assistance in connection with this matter.

Sincerely,

Moluden D. Means

Malcolm N. Means

MNM/bml Attachment cc: All Parties of Record (w/attachment)

### **CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that a true and correct copy of the foregoing Notice, filed on behalf of Tampa Electric Company, has been furnished by electronic mail on this 14<sup>th</sup> day of May 2025 to the following:

Daniel Dose Jennifer Crawford Shaw Stiller Office of General Counsel Florida Public Service Commission Room 390L – Gerald L. Gunter Building 2540 Shumard Oak Boulevard Tallahassee, FL 32399-0850 ddose@psc.state.fl.us jcrawfor@psc.state.fl.us sstiller@psc.state.fl.us discovery-gcl@psc.state.fl.us

Walter Trierweiler Charles Rehwinkel Ms. Patricia A. Christensen Mary Wessling Octavio Ponce Austin Watrous Office of Public Counsel 111 West Madison Street, Room 812 Tallahassee, FL 32399-1400 <u>Trierweiler.Walt@leg.state.fl.us</u> <u>Rehwinkel.charles@leg.state.fl.us</u> <u>christensen.patty@leg.state.fl.us</u> <u>wessling.mary@leg.state.fl.us</u> <u>ponce.octavio@leg.state.fl.us</u> <u>watrous.austin@leg.state.fl.us</u>

Matthew R. Bernier Robert Pickels Stephanie A. Cuello Duke Energy Florida, LLC 106 E. College Avenue, Suite 800 Tallahassee, FL 32301-7740 <u>matthew.bernier@duke-energy.com</u> <u>Robert.pickels@duke-energy.com</u> <u>stephanie.cuello@duke-energy.com</u> <u>FLRegulatoryLegal@duke-energy.com</u> Kenneth A. Hoffman Florida Power & Light Company 134 W. Jefferson Street Tallahassee, FL 32301 ken.hoffman@fpl.com

Christopher T. Wright David M. Lee Florida Power & Light Company 700 Universe Boulevard Juno Beach, FL 33408-0420 <u>christopher.wright@fpl.com</u> david.lee@fpl.com

Jon C. Moyle, Jr. Moyle Law Firm, P.A. 118 N. Gadsden Street Tallahassee, FL 32301 jmoyle@moylelaw.com mqualls@moylelaw.com

James W. Brew Laura Wynn Baker Sarah B. Newman Stone Mattheis Xenopoulos & Brew, P.C. 1025 Thomas Jefferson Street, NW Ste. 800 West Washington, D.C. 20007-5201 jbrew@smxblaw.com lwb@smxblaw.com sbn@smxblaw.com

Dianne M. Triplett Duke Energy Florida, LLC 299 First Avenue North St. Petersburg, FL 33701 dianne.triplett@duke-energy.com Mike Cassel Florida Public Utilities Company 208 Wildlight Avenue Yulee, FL 32097 <u>mcassel@fpuc.com</u>

Beth Keating Gunster Law Firm 215 South Monroe St., Suite 601 Tallahassee, FL 32301 bkeating@gunster.com

Michelle Napier Phuong Nguyen Florida Public Utilities Company 1635 Meathe Drive West Palm Beach, FL 33411 <u>mnapier@fpuc.com</u> <u>pnguyen@chpk.com</u> Peter J. Mattheis Michael K. Lavanga Joseph R. Briscar Stone Law Firm 1025 Thomas Jefferson St., NW Suite 800 West Washington, DC 20007-5201 pjm@smxblaw.com mkl@smxblaw.com jrb@smxblaw.com

Molula n. Mean

ATTORNEY

### BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Storm Protection Plan Cost Recovery Clause

DOCKET NO. 20250010-EI FILED: May 14, 2025

### TAMPA ELECTRIC COMPANY'S NOTICE OF WITNESS SUBSTITUTION

TO: ALL PARTIES OF RECORD

Please take notice that Kevin E. Palladino, Manager, Storm Protection Plan Engineering and Customer Outreach for Tampa Electric Company, will serve as Tampa Electric's witness in place of Tampa Electric witness C. David Sweat, who previously submitted testimony in this docket on April 1, 2025. *See* Document No. 02484-2025. Mr. Palladino's Direct Testimony, which is attached, will substitute for Mr. Sweat's Direct Testimony. This Direct Testimony is identical to Mr. Sweat's other than the responses to those questions that ask about the witness' identity and qualifications

DATED this 14<sup>th</sup> day of May 2025.

Respectfully submitted,

holiden D. Mean

MALCOLM N. MEANS <u>mmeans@ausley.com</u> J. JEFFRY WAHLEN <u>jwahlen@ausley.com</u> Ausley McMullen Post Office Box 391 Tallahassee, Florida 32302 (850) 224-9115

ATTORNEYS FOR TAMPA ELECTRIC COMPANY

### **CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that a true and correct copy of the foregoing Notice, filed on behalf of Tampa Electric Company, has been furnished by electronic mail on this 14<sup>th</sup> day of May 2025 to the following:

Daniel Dose Jennifer Crawford Shaw Stiller Office of General Counsel Florida Public Service Commission Room 390L – Gerald L. Gunter Building 2540 Shumard Oak Boulevard Tallahassee, FL 32399-0850 ddose@psc.state.fl.us jcrawfor@psc.state.fl.us sstiller@psc.state.fl.us discovery-gcl@psc.state.fl.us

Walter Trierweiler Charles Rehwinkel Ms. Patricia A. Christensen Mary Wessling Octavio Ponce Austin Watrous Office of Public Counsel 111 West Madison Street, Room 812 Tallahassee, FL 32399-1400 <u>Trierweiler.Walt@leg.state.fl.us</u> <u>Rehwinkel.charles@leg.state.fl.us</u> <u>christensen.patty@leg.state.fl.us</u> <u>wessling.mary@leg.state.fl.us</u> <u>ponce.octavio@leg.state.fl.us</u> <u>watrous.austin@leg.state.fl.us</u>

Matthew R. Bernier Robert Pickels Stephanie A. Cuello Duke Energy Florida, LLC 106 E. College Avenue, Suite 800 Tallahassee, FL 32301-7740 <u>matthew.bernier@duke-energy.com</u> <u>Robert.pickels@duke-energy.com</u> <u>stephanie.cuello@duke-energy.com</u> <u>FLRegulatoryLegal@duke-energy.com</u> Kenneth A. Hoffman Florida Power & Light Company 134 W. Jefferson Street Tallahassee, FL 32301 ken.hoffman@fpl.com

Christopher T. Wright David M. Lee Florida Power & Light Company 700 Universe Boulevard Juno Beach, FL 33408-0420 <u>christopher.wright@fpl.com</u> david.lee@fpl.com

Jon C. Moyle, Jr. Moyle Law Firm, P.A. 118 N. Gadsden Street Tallahassee, FL 32301 jmoyle@moylelaw.com mqualls@moylelaw.com

James W. Brew Laura Wynn Baker Sarah B. Newman Stone Mattheis Xenopoulos & Brew, P.C. 1025 Thomas Jefferson Street, NW Ste. 800 West Washington, D.C. 20007-5201 jbrew@smxblaw.com lwb@smxblaw.com sbn@smxblaw.com

Dianne M. Triplett Duke Energy Florida, LLC 299 First Avenue North St. Petersburg, FL 33701 dianne.triplett@duke-energy.com Mike Cassel Florida Public Utilities Company 208 Wildlight Avenue Yulee, FL 32097 <u>mcassel@fpuc.com</u>

Beth Keating Gunster Law Firm 215 South Monroe St., Suite 601 Tallahassee, FL 32301 bkeating@gunster.com

Michelle Napier Phuong Nguyen Florida Public Utilities Company 1635 Meathe Drive West Palm Beach, FL 33411 <u>mnapier@fpuc.com</u> <u>pnguyen@chpk.com</u> Peter J. Mattheis Michael K. Lavanga Joseph R. Briscar Stone Law Firm 1025 Thomas Jefferson St., NW Suite 800 West Washington, DC 20007-5201 pjm@smxblaw.com <u>mkl@smxblaw.com</u> jrb@smxblaw.com

Molula n. Mean

ATTORNEY



### BEFORE THE

### FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20250010-EI

IN RE: STORM PROTECTION PLAN COST RECOVERY CLAUSE

TESTIMONY AND EXHIBIT

OF

KEVIN E. PALLADINO

FILED: MAY 14, 2025

1		BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION			
2	PREPARED DIRECT TESTIMONY				
3	OF				
4	KEVIN E. PALLADINO				
5					
6	Q.	Please state your name, address, occupation, and employer.			
7					
8	A.	My name is Kevin E. Palladino. My business address is 5321			
9		Hartford Street, Tampa, Florida 33619. I am employed by			
10		Tampa Electric Company ("Tampa Electric" or "the company")			
11		as Manager Storm Protection Plan Engineering and Customer			
12		Outreach.			
13					
14	Q.	Please describe your duties and responsibilities in that			
15		position.			
16					
17	A.	My duties and responsibilities include the governance and			
18		oversight of Tampa Electric's Storm Protection Plan			
19		("SPP" or "the Plan") development and implementation.			
20		This includes leading the development of the SPP,			
21		prioritization of projects within each of the programs,			
22		development of project and program costs and overall			
23		implementation of the SPP. Organizationally, Tampa			
24		Electric employees responsible for management and			
25		implementation of the Vegetation Management, Feeder			

Hardening, Distribution Lateral Undergrounding, 1 2 Distribution Storm Surge Hardening, and Transmission 3 Asset Upgrade programs, as well as the SPP warehouse, report through my organization. 4 5 Please provide a brief outline of educational ο. your 6 background and professional experience. 7 8 I have a bachelor's degree in electrical engineering and a 9 Α. in electrical engineering from master's degree 10 the University of South Florida. I have ten years of service 11 with Tampa Electric working in Distribution Design and 12 Engineering. 13 14 What is the purpose of your testimony in this proceeding? 0. 15 16 The purpose of my testimony is to present and support the 17 Α. company's actual SPP costs and accomplishments achieved 18 from January 2024 through December 2024 for Commission 19 review and approval. My testimony will also provide a 20 description of each program, a summary of accomplishments, 21 and detail for the variances between the actual and 22 23 projected costs recovered through the company's Storm Protection Plan Cost Recovery Clause ("SPPCRC"). 24 25

1	Q.	Did you prepare any exhibits in support of your testimony?
2		
3	A.	Yes. Exhibit No. KEP-1, entitled "Tampa Electric Company,
4		2024 Storm Protection Plan Accomplishments" was prepared
5		under my direction and supervision.
6		
7	Dist	ribution Lateral Undergrounding
8	Q.	Please provide a description of the Distribution Lateral
9		Undergrounding Program.
10		
11	A.	The Distribution Lateral Undergrounding Program converts
12		existing overhead distribution lateral facilities to
13		underground to increase the resiliency and reliability of
14		the distribution system serving the company's customers
15		during extreme weather events.
16		
17	Q.	How many Distribution Lateral Underground projects were
18		projected to be completed in 2024?
19		
20	A.	Tampa Electric projected to engineer 309 projects and
21		construct 190 projects in 2024.
22		
23	Q.	How many Distribution Lateral Underground projects did the
24		company complete in 2024?
25		

1	A.	Tampa Electric completed 96 engineering projects and 89		
2		construction projects in 2024, which is detailed in my		
3		Exhibit No. KEP-1, Table DLU.1.		
4				
5	Q.	What contributed to the difference between planned and		
6		completed projects?		
7				
8	A.	A total of 499 projects were in progress and 185 projects		
9		were completed in 2024. Projects in progress include		
10		engineering and construction work carried over from		
11		previous years and projects started in 2024. The amount of		
12		work in progress was therefore greater than projects		
13		originally scheduled for 2024 alone.		
14				
15	Q.	What was the cost variance in the Distribution Lateral		
16		Underground program in 2024?		
17				
18	A.	The Distribution Lateral Underground program had a variance		
19		of \$513,038 less than projected, which is detailed in the		
20		company's Storm Protection Plan Cost Recovery Clause		
21		("SPPCRC") True-up file (Form A-4, line 7 and Form A-6,		
22		line 1).		
23				
24	Q.	Can you explain what contributed to this variance?		
25				
	I			

	I				
1	A.	Yes. Restoration efforts following Hurricanes Helene and			
2		Milton delayed the Distribution Lateral Underground program			
3		for over three weeks while these restoration activities			
4		were ongoing. Debris from the storms also hampered the			
5		ability to begin underground work in certain areas, further			
б		contributing to delays.			
7					
8	Vege	tation Management			
9	Q.	Please provide a description of the Vegetation Management			
10		("VM") Program?			
11					
12	A.	The VM Program involves the strategic planning and			
13		maintenance of vegetation around power lines and electrical			
14		infrastructure, ensuring the reliability and safety of the			
15		system, preventing outages, and reducing outage duration			
16		times. Tampa Electric's VM Program consists of five			
17		initiatives.			
18					
19		• Four-year Cycle Distribution VM (Planned)			
20		• Transmission VM (Planned)			
21		• Reactive VM (Unplanned)			
22		• Supplemental Distribution Circuit VM (Planned)			
23		• Mid-Cycle Distribution VM (Planned)			
24					
25	Q.	How many VM miles were projected to be completed in 2024?			
		5			

i		
1	Α.	Tampa Electric projected to complete the following miles:
2		
3		• Four-Year Cycle VM: 1,534 miles
4		• Transmission VM: 525 miles
5		• Supplemental VM: 700 miles
6		• Mid-Cycle VM: 1,000 miles
7		
8	Q.	How many VM miles did the company complete in 2024?
9		
10	A.	Tampa Electric completed the following miles, which is
11		detailed in my Exhibit No. KEP-1, Tables VM.1, VM.2, VM.3,
12		and VM.5:
13		
14		• Four-Year Cycle VM: 1,372 miles
15		• Transmission VM: 525 miles
16		• Supplemental VM: 461 miles
17		• Mid-Cycle WM: 1,008 miles
18		
19	Q.	What was the cost variance in the VM program in 2024?
20		
21	A.	The VM program had a cost variance of \$5,650,987 less than
22		projected, which is detailed in the company's SPPCRC True-
23		up file (Form A-4, lines 1.1, 1.2 and 1.3).
24		
25	Q.	Can you explain what contributed to this variance?
		6

1	Α.	Yes. The primary contributor to the VM variance was the			
2		contract default of one of Tampa Electric's vegetation			
3		management contractors, resulting in fewer miles being			
4		trimmed and consequently a reduction in spending.			
5		Additionally, several weeks of storm restoration after			
6		Hurricanes Milton and Helene led to fewer miles being			
7 8		trimmed, reducing the spend for fourth quarter of 2024.			
9					
10	Transmission Asset Upgrades				
11	Q.	Please provide a description of the Transmission Asset			
12		Upgrades Program.			
13					
14	A.	The Transmission Asset Upgrades Program proactively and			
15		systematically replaces the company's remaining wood			
16		transmission poles with non-wood material.			
17					
18	Q.	How many Transmission Asset Upgrade projects were projected			
19		to be completed in 2024?			
20					
21	Α.	Tampa Electric projected 10 projects would be worked in			
22		2024 that would upgrade 472 poles.			
23					
24	Q.	How many Transmission Asset Upgrade projects did the			
25		company complete in 2024?			

Tampa Electric completed five projects in 2024. The total 1 Α. number of poles upgraded were 428, which is detailed in my 2 Exhibit No. KEP-1, Table TAU.1. The poles upgraded are a 3 combination of projects carried over from previous years as 4 well as projects initiated in 2024. 5 6 Are there instances when projects carry over into the 7 Q. following year? 8 9 Yes. A single project for the Transmission Asset Upgrade Α. 10 11 Program equates to one transmission circuit, which may include anywhere from a few poles up to several hundred 12 poles. The pace of replacement is between 450 to 500 poles 13 14 per year and is comprised of poles from several projects. Depending on factors such as permitting challenges, outage 15 and resource availability, poles 16 constraints can be 17 upgraded during a project (circuit) already in progress or another project that is readily available without 18 constraints. 19 20 the cost variance in the Transmission Asset What was 21 0. 22 Upgrades program in 2024? 23 The Transmission Asset Upgrades program had a cost variance 24 Α. 25 of \$146,140 less than projected, which is detailed in the

1		company's SPPCRC True-up file (Form A-4, line 2 and Form A-		
2		6, line 2).		
3				
4	Q.	Can you explain what contributed to this variance?		
5				
6	A.	. Yes. Transmission Asset Upgrade contractors were called		
7		upon to support Tampa Electric's and the Southeastern		
8		Electric Exchange's restoration efforts following		
9		Hurricanes Debby, Helene, and Milton. This led to a		
10		reduction in the number of poles completed in 2024, which		
11		in turn reduced spending for this program.		
12				
13	Substation Extreme Weather Hardening			
14	Q.	${f Q}$ . Please provide a description of the Substation Extreme		
15		Weather Hardening Program.		
16				
17	A.	The Substation Extreme Weather Hardening program hardens		
18	and protects the company's substation assets that are			
19	vulnerable to flooding or storm surge.			
		vulnerable to flooding or storm surge.		
20		vulnerable to flooding or storm surge.		
	Q.	vulnerable to flooding or storm surge. How many Substation Extreme Weather Hardening projects were		
20	Q.			
20 21	Q.	How many Substation Extreme Weather Hardening projects were		
20 21 22	Q. A.	How many Substation Extreme Weather Hardening projects were		
20 21 22 23		How many Substation Extreme Weather Hardening projects were projected to be completed in 2024?		

	1	
1	Q.	How many Substation Extreme Weather Hardening projects did
2		the company complete in 2024?
3		
4	A.	Tampa Electric completed one project in 2024. The second
5		project that was scheduled to start in 2024 will be
6		completed in 2025.
7		
8	Q.	What was the cost variance in the Substation Extreme Weather
9		Hardening program in 2024?
10		
11	A.	The Substation Extreme Weather Hardening program had a cost
12		variance of \$6,247 less than projected, which is detailed
13		in the company's SPPCRC True-up file (Form A-4, line 3 and
14		Form A-6, line 3).
15		
16	Q.	Can you explain what contributed to the variance?
17		
18	A.	Yes. The variance is due to delays in the receipt of
19		materials for the project, which pushed the project into
20		2025.
21		
22	Dist	ribution Overhead Feeder Hardening
23	Q.	Please provide a description of the Distribution Overhead
24		Feeder Hardening Program.
25		
	1	

1	A.	The Distribution Overhead Feeder Hardening program includes		
2		strategies to further enhance the resiliency and		
3		reliability of the distribution network by hardening the		
4		grid to minimize interruptions and reduce customer outage		
5		counts during extreme weather events by implementing		
6		distribution feeder strengthening and distribution feeder		
7		sectionalizing and automation.		
8				
9	Q.	How many Distribution Overhead Feeder Hardening projects		
10		were projected to be completed in 2024?		
11				
12	A.	Tampa Electric projected 79 Distribution Overhead Feeder		
13		Hardening projects would be in progress during 2024.		
14				
15	Q.	How many Distribution Overhead Feeder Hardening projects		
16		did the company complete in 2024?		
17				
18	A.	Tampa Electric completed the engineering design of 50		
19		Distribution Overhead Feeder Hardening projects in 2024,		
20		which is detailed in my Exhibit No. KEP-1, Table OVHF.1.		
21		Operationally, the company worked on 23 distribution		
22		projects and completed nine. These projects included 723		
23		pole replacement/upgrades, nine three-phase reclosers and		
24		51 single-phase reclosers. This work is detailed in my		
25		Exhibit No. KEP-1, Table OVHF.2.		
		11		

	1				
1	Q.	What contributed to the difference between projected and			
2		completed projects?			
3					
4	A.	Restoration efforts following Hurricanes Helene and Milton			
5		delayed the Distribution Overhead Feeder Hardening program			
6		for over three weeks while these restoration activities			
7		were ongoing.			
8					
9	Q.	What was the cost variance in the Distribution Overhead			
10		Feeder Hardening program in 2024?			
11					
12	A.	The Distribution Overhead Feeder Hardening program had a			
13		variance of \$335,229 less than projected, which is detailed			
14		in the company's SPPCRC True-up file (Form A-4, line 4 and			
15		Form A-6, line 4).			
16					
17	Q.	Can you explain what contributed to the variance?			
18					
19	A.	Yes. Hurricanes Helene and Milton required all available			
20		resources to assist in the restoration efforts. This resulted			
21	in a reduction in available time and resources to complete				
22	the originally planned projects.				
23					
24	Inf	rastructure Inspections			
25	Q.	Please provide a description of the Infrastructure			
		12			

	1			
1		Inspections Program.		
2				
3	A.	The Infrastructure Inspections Program involves the		
4		inspections performed on the company's transmission and		
5		distribution infrastructure, including all wooden		
б		distribution and transmission poles, transmission		
7		structures, and substations, as well as the audit of all		
8		joint use attachments.		
9				
10	Q.	How many infrastructure inspections did the company project		
11		to complete in 2024?		
12				
13	A.	The company projected to complete the following number of		
14		infrastructure inspections:		
15				
16		Distribution: 2024		
17		Wood Pole: 35,625		
18				
19		Transmission: 2024		
20		Wood Pole/Groundline 124		
21				
22		Aerial Infrared Patrol, Ground Patrol and Substations		
23		inspections are performed on all circuits and substations		
24		multiple times throughout the year.		
25				

1	Q.		ions did the company
2		complete in 2024?	
3			
4	A.	Tampa Electric completed the fo	ollowing infrastructure
5		inspections in 2024:	
6			
7		Distribution:	2024
8		Wood Pole:	36,789
9			
10		Transmission:	2024
11		Wood Pole/Groundline:	125 poles
12		Aerial Infrared Patrol:	216 circuits
13		Ground Patrol:	216 circuits
14		Substations:	
15		Distribution	524 inspections
16		Transmission	414 inspections
17			
18	Q.	What was the cost variance in the Ir	nfrastructure Inspection
19		program in 2024?	
20			
21	A.	The Infrastructure Inspection prog	ram had a cost variance
22		of \$216,347 less than projected, w	hich is detailed in the
23		company's SPPCRC True-up file (Form	A-4, lines 5.1 and 5.2).
24			
25	Q.	Can you explain what contributed to	the variance?
		1 4	

1		
1	A.	Yes. Distribution Infrastructure Inspection requirements
2		were refined in a new contract in 2024. This included the
3		removal of the comprehensive clearance assessment, visual
4		inspection of non-wood poles and photos of failed poles.
5		Tampa Electric determined that these activities are already
6		being accomplished in the company's existing processes and
7		are therefore duplicative. This contract refinement led to
8		lower than projected spend for this program.
9		
10	LEGA	CY STORM HARDENING INITIATIVES
11	Q.	What are the legacy storm hardening initiatives?
12		
13	A.	The legacy storm hardening initiatives are storm hardening
14		activities that were mandated by the Commission as
15		components of the company's prior storm hardening plan in
16		Commission in Order No. PSC-06-0351-PAA-EI.
17		
18	Q.	Are the legacy storm hardening initiatives the same for the
19		company's current 2022-2031 SPP as they were in the
20		company's most recent three-year Storm Hardening Plan that
21		was approved by the Commission in Order No. PSC-2019-0302-
22		PAA-EI on July 29, 2019?
23		
24	A.	Yes, they are the same.
25		
		15

1	Q.	Does Tampa Electric recover all of the costs for the legacy
2		storm hardening initiatives through the SPPCRC?
3		
4	A.	No. Tampa Electric recovers the costs associated with the
5		following legacy storm hardening initiatives through the
б		SPPCRC:
7		
8		• Distribution vegetation management
9		• Transmission vegetation management
10		• Distribution infrastructure inspections
11		• Transmission infrastructure inspections
12		• Transmission asset upgrades
13		
14	Q.	What are the other legacy storm hardening initiatives for
15		which costs are not recovered through the SPPCRC?
16		
17	A.	Costs associated with the following legacy storm hardening
18		initiatives are not recovered through the SPPCRC:
19		
20		• Unplanned distribution vegetation management
21		• Unplanned transmission vegetation management
22		• Geographic Information System
23		• Post-Storm Data Collection
24		• Outage Data - Overhead and Underground Systems
25		• Increased Coordination with Local Governments
		16

1		• Collaborative Research
2		• Disaster Preparedness and Recovery Plan
3		• Distribution Wood Pole Replacements
4		
5	COMM	ION STORM PROTECTION PLAN COSTS AND ACTIVITIES
6	Q.	Will you please provide a description of the Common SPP
7		costs?
8		
9	A.	Yes. The Common SPP costs represent those costs that cannot
10		be attributed to a specific SPP Program. They are made up
11		of an accumulation of incremental costs associated with
12		developing, implementing, managing, and administering all
13		of the SPP Programs.
14		
15	Q.	What was the cost variance in the Common SPP category in
16		2024?
17		
18	A.	The Common SPP category had a variance of \$100,821 less
19		than projected, which is detailed in the company's SPPCRC
20		True-up file (Form A-4, line 6).
21		
22	Q.	Can you explain what contributed to the variance?
23		
24	A.	Yes. The company experienced a lower amount of labor in
25		2024, due to a SPP manager position vacancy in the
		17

	1	
1		Regulatory Affairs Department.
2		
3	SUMM	IARY
4	Q.	Please summarize your testimony.
5		
6	A.	Despite the challenges in 2024, such as hurricanes and
7		contractor issues, the company has demonstrated successful
8		accomplishments in each of its SPP Programs in 2024 with an
9		overall lower than projected level of spending.
10		
11	Q.	Does that conclude your testimony?
12		
13	A.	Yes.
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
		18

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 1 OF 33 FILED: 05/14/2025



# 2024 STORM PROTECTION PLAN ACCOMPLISHMENTS

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 2 OF 33 FILED: 05/14/2025



# **Table of Contents**

Summary of 2024 Storm Protection Plan Accomplishments3
Distribution Lateral Undergrounding4
Vegetation Management5
Distribution6
Transmission9
Transmission Asset Upgrades9
Substation Extreme Weather Hardening10
Distribution Overhead Feeder Hardening10
Infrastructure Inspections13
Wood Pole Inspection Program14
Transmission Inspections17
Pre-climb inspections18
Substation Inspections19
Joint-Use Pole Attachments Audits19
Infrastructure Inspections Summary21
Legacy Storm Hardening Initiatives21
Geographic Information System21
Post-Storm Data Collection and Forensic Analysis
Outage Data Differentiating Between Overhead and Underground Systems23
Increase Coordination with Local Governments
Collaborative Research29
Disaster Preparedness and Recovery Plan
Distribution Pole Replacements32
Overhead to Underground Conversion of Interstate Highway Crossings33
Conclusion

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 3 OF 33 FILED: 05/14/2025

## **SUMMARY OF 2024**

### STORM PROTECTION PLAN ACCOMPLISHMENTS

Tampa Electric's Storm Protection Plan ("Plan" or "SPP") sets out a systematic and comprehensive approach to storm protection focused on Programs and Projects that provide the highest level of reliability and resiliency benefits for the lowest relative cost. The company believes that these activities will achieve the Florida Legislature's goals of "reducing restoration costs and outage times associated with extreme weather events and enhancing reliability" in a cost-efficient manner.

Tampa Electric's 2024 Storm Protection Annual Status Report covers the third full year of the company's 2022-2031 Storm Protection Plan, which provides a comprehensive approach to protect and strengthen its electric utility infrastructure to withstand extreme weather conditions as well as to reduce restoration costs and outage times in a practical, and cost-effective manner. Protecting and strengthening Tampa Electric's transmission and distribution electric utility infrastructure against extreme weather conditions can effectively reduce restoration costs and outage times and improve overall service reliability for customers. Tampa Electric received approval of its 2022-2031 Storm Protection Plan in Docket No. 20220048-EI, Order No. PSC-2022-0386A-FOF-EI, issued December 1, 2022 [DN 11809-2022].

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 4 OF 33 FILED: 05/14/2025

# **Distribution Lateral Undergrounding**

Tampa Electric's Distribution Lateral Undergrounding Program strategically undergrounds existing overhead lateral primary, lateral secondary and service lines. The expected benefits from this Program are:

- Reducing the number and severity of customer outages during extreme weather events.
- Reducing the amount of system damage during extreme weather.
- Reducing the material and manpower resources needed to respond to extreme weather events.
- Reducing the number of customer complaints from the reduction in outages during extreme weather events.
- Reducing restoration costs following extreme weather events.

In addition to the many benefits that should be realized from distribution lateral undergrounding during extreme weather events, it will also provide additional blue-sky benefits such as:

- Reducing the number of momentary and prolonged unplanned outages.
- Reducing the number of customer complaints from outages.
- Improving customer reliability and power quality.

Table DLU.1 shows the number of distribution lateral undergrounding projects that were designed and constructed in 2024.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 5 OF 33 FILED: 05/14/2025

2024 Distribution Lateral Undergrounding							
	Projects Planned	Projects Completed					
Engineering Design and Right of Way Obtainment	309	96					
Construction	190	89					

### Table DLU.1 – 2024 Distribution Lateral Undergrounding

# **Vegetation Management**

Tampa Electric's Vegetation Management Program ("VMP") combines a continuation of its existing filed and approved distribution and transmission VMP activities with three additional strategic vegetation management ("VM") initiatives.

In 2024, Tampa Electric utilized approximately 39 contracted tree trim personnel to manage the company's transmission tree trimming requirements. In addition, Tampa Electric's Transmission Vegetation Management Program ("TVMP") continues to comply with the North American Electric Reliability Corporation ("NERC") standard for Transmission Vegetation Management FAC-003-5.

For 2024, Tampa Electric had 308 dedicated distribution tree trim personnel throughout the company's seven service areas. These dedicated resources are broken out into two categories: proactive and reactive. The proactive resources are utilized for circuit VM activities and consist of 270 personnel. The reactive resources consist of 38 personnel and are employed for customer requested work and work orders associated with circuit improvement process.

Tampa Electric continued its efforts toward effective VM as part of a coordinated plan with local governments and communities. Tampa Electric's Line Clearance Department and Regional Affairs Department hold periodic meetings with local governments and

5

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 6 OF 33 FILED: 05/14/2025

communities related to VM activities, upcoming projects, and emergency recovery strategies. Tampa Electric's Regional Affairs Department is tasked with communicating with local and state government officials as well as residential and commercial customers on several topics, including vegetation management. The company's goal is to keep governmental officials aware and briefed on relevant issues regarding these topics while working with internal Tampa Electric departments to resolve vegetation management issues in and around the company's infrastructure in a timely and responsive manner.

During the fourth quarter of 2024, Tampa Electric submitted its renewal application to the National Arbor Day Foundation's Tree Line USA Program and received endorsement in the first quarter of 2025. This will be the sixteenth consecutive year Tampa Electric has received the National Arbor Day Foundation's prestigious Tree Line USA Program designation which recognizes the company for their commitment to proper tree care and environmental stewardship.

#### Distribution:

Distribution Four-Year Cycle: Tampa Electric manages the vegetation on the company's distribution system on a four-year cycle. This approach was approved by the Commission in Docket No. 20120038-EI, Order No. PSC 2012-0303-PAA-EI, issued June 12, 2012. The four-year cycle is flexible enough to allow the company to change circuit prioritization utilizing the company's reliability-based methodology. Table VM.1 below shows the number of Four-Year Cycle VM miles completed in 2024:

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 7 OF 33 FILED: 05/14/2025

### Table VM.1 – 2024 Distribution Four-Year Cycle

2024 Distribution Vegetation Management Four-Year Cycle (Miles Trimmed)										
3rd Cycle, Year 4										
	Company Service Area									
	CSA	DCA	ESA	PCA	SHA	WSA	WHA	Total		
4-Year VM Miles Goal 253.5 92.4 210.4 306					178.7	265.4	227.7	1,534.3		
4-Year VM Miles Actual	4-Year VM Miles Actual 271.9 91.9 97.9 283.9 176.1 229.5 221.2 1,372.									

Supplemental Distribution Circuit VM: Tampa Electric initiated 700 miles of supplemental distribution circuit VM to enhance the current four-year distribution VM cycle to reduce the proximity between vegetation and electrical facilities. Circuit prioritization and selection was centered around storm resiliency and mitigating outage risk on those circuits most susceptible to storm damage. Table VM.2 below shows the number of miles of supplemental VM by Service Area that was conducted in 2024:

Table VM.2 – 2024 Supplemental Distribution Circuit VM

2024 Supplemental Vegetation Management (Miles Trimmed)									
Company Service Area									
	CSA	DCA	ESA	PCA	SHA	WSA	WHA	Total	
Supplemental Miles Goal	134.9	7.8	126.9	99.3	120.8	78.9	135.1	703.7	
Supplemental Miles Actual	102.6	7.7	47.7	136.2	62.0	56.0	48.4	460.6	

Mid-Cycle Distribution VM: Tampa Electric initiated Mid-Cycle VM which is an inspection-based approach and is designed to identify and mitigate hazard trees and areas where vegetation cannot be controlled effectively following a four-year distribution VM cycle. In 2024, the company performed VM on 2,283 spans and

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 8 OF 33 FILED: 05/14/2025

removed 1,333 hazard trees as part of the Mid-Cycle Initiative. Table VM.3 shows the number of miles of Mid-Cycle VM by Service Area that was conducted in 2024.

Table VM.3 – 2024 Mid-Cycle Distribution VM

2024 Mid-Cycle Distribution Vegetation Management (Miles Inspected)									
Company Service Area									
CSA DCA ESA PCA SHA WSA WHA					Total				
Mid-Cycle Inspection Miles Goal	158.5	0.0	104.2	354.4	37.8	101.7	251.5	1,008.1	
Mid-Cycle Inspection Miles Actual         158.5         0.0         104.2         354.4         37.8         101.7         251.5         1,00						1,008.1			

### **Reactive:**

Tampa Electric supports internal and external customer requests through its reactive initiative. Customer requested work and work orders associated with circuit improvement process are the primary categories of reactive work. Work is tracked through the company's work management software. Each work request ("WR") is reviewed by Tampa Electric or contract staff. Those requiring trimming are issued to contract reactive crew. Table VM.4 shows the Reactive work requests reviewed and completed in 2024.

Table VM.4 – 2024 Reactive VM

2024 Reactive Vegetation Management (Work Requests)									
Company Service Area									
	CSA	DCA	ESA	PCA	SHA	WSA	WHA	Total	
Reactive Work Requests Reviewed	946	139	716	443	263	1,004	314	3,825	
Reactive Work Requests Trimmed         383         70         350         223         161         395         123					157	1,739			

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 9 OF 33 FILED: 05/14/2025

### Transmission:

Tampa Electric trims the company's transmission lines utilizing a comprehensive VM strategy. The company operates four categories of transmission including 230kV, 138kV, 69kV, and 34kV. For circuits with voltages above 200kV, the company complies with Federal Energy Regulatory Commission ("FERC") standard FAC-003-5. This standard imposes performance-based, risk-based, and competency-based requirements for VM on these circuits. Table VM.5 below shows the Transmission VM completed in 2024 compared to the annual goal:

Table VM.5 - 2024	Transmission VM
-------------------	-----------------

2024 Transmission Vegetation Management									
	Bulk Transmission (miles)	Non-Bulk Transmission (miles)	Right of Way Transmission (acres)						
Transmission VM Miles Goal	275.4	250.0	10,034	525.4					
Transmission VM Miles Actual         275.4         250.0         8,000         525.4									

## **Transmission Asset Upgrades**

The Transmission Asset Upgrades Program is the systematic and proactive replacement of all Tampa Electric's remaining transmission wood poles with non-wood material. The company intends to complete this conversion from wood transmission poles to non-wood material poles during the timeframe of the 2022-2031 SPP. Tampa Electric has over 25,000 transmission poles and structures with approximately 1,350 circuit miles of transmission facilities. Table TAU.1 shows the number of transmission assets that were hardened in 2024.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 10 OF 33 FILED: 05/14/2025

Table TAU.1 – 2024 Transmission Asset Upgrades

2024 Transmission Asset Upgrades Structures Hardened / System Update		
	Goal	Actual
Transmission Structures – Poles - Non SPP	N/A	34
Transmission Structures – Poles - SPP		428
Transmission System Hardened (Percentage)	91.3%	92.5%

# **Substation Extreme Weather Hardening**

Tampa Electric's Substation Extreme Weather Hardening Program is designed to harden existing substations to minimize outages, reduce restoration times and enhance emergency response during extreme weather events. Hardening Projects within this program involve raising substation control enclosures and equipment, and, in some instances, relocation of substation equipment and modification to the designs of the company's substations.

Tampa Electric projected to complete two projects in 2024. One project was completed in 2024, and the second project will be completed in 2025.

# **Distribution Overhead Feeder Hardening**

Tampa Electric's Distribution Overhead Feeder Hardening Program will strengthen the company's distribution system to withstand increased wind-loading and harsh environmental conditions associated with extreme weather events. The Distribution Overhead Feeder Hardening Program will focus on increasing the resiliency and sectionalizing capabilities of the distribution electrical system to better withstand extreme weather and minimize outages, outage durations and affected customer counts through two primary enhancements: Distribution Feeder Strengthening and Distribution Feeder Sectionalizing and Automation. Table OVHF.1 below provides the

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 11 OF 33 FILED: 05/14/2025

designed equipment for engineering and Table OVHF.2 provides the equipment that was installed.

2024 Distribution Overhead Feeder Hardening					
Designed Equipment					
	Pole	Three-Phase	Single-Phase		
Circuit Number	Replacement /	Recloser	Recloser		
	Upgrades	Installations	Installations		
13397	27	0	0		
13117	50	5	0		
13151	42	3	0		
13153	24	3	0		
13024	69	0	0		
13610	49	3	4		
13786	198	2	0		
13948	116	3	0		
13099	128	5	3		
13236	56	0	0		
13293	75	3	0		
13370	70	3	2		
13630	77	2	3		
13853	72	0	0		
13916	37	6	0		
13918	36	0	0		
13962	83	0	0		
13826	64	1	0		
13191	67	1	0		
13094	75	1	0		
13008	126	1	0		
13024	94	5	0		
13028	69	2	0		
13039	91	4	0		
13072	66	3	0		
13077	85	5	0		
13187	91	3	0		
13226	50	4	0		
13230	67	3	0		
13292	72	2	0		
13296	35	0	0		
13299	42	5	0		

Table OVHF.1 – 2024 Distribution Overhead Feeder Hardening Designed

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 12 OF 33 FILED: 05/14/2025

	Pole	Three-Phase	Single-Phase
Circuit Number	Replacement /	Recloser	Recloser
	Upgrades	Installations	Installations
13311	92	2	0
13343	25	1	0
13364	9	1	0
13414	195	0	0
13417	65	3	0
13457	76	3	0
13685	70	7	0
13687	156	4	0
13737	56	4	0
13753	74	3	0
13754	45	2	0
13772	34	0	0
13892	47	6	0
13989	2	0	0
14014	20	1	0
14040	75	3	0
14042	69	4	0
14083	14	0	0
Total	3,427	122	12

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 13 OF 33 FILED: 05/14/2025

2024 Distribution Overhead Feeder Hardening			
Installed Equipment			
Circuit Number	Pole Replacement / Upgrades	Three-Phase Recloser Installations	Single-Phase Recloser Installations
13364	9	1	0
13691	35	0	0
13312	40	0	0
13772	34	0	20
13343	25	0	3
13226	46	0	0
13299	42	0	0
13892	47	7	0
13695	15	0	0
13737	27	0	0
13754	17	0	0
13187	11	0	0
13028	38	0	0
13008	38	0	0
14040	37	0	0
13230	50	0	0
14042	51	0	0
13077	28	0	0
14014	20	1	4
14083	14	0	0
13473	35	0	0
13417	28	0	0
13039	36	0	24
Total	723	9	51

Table OVHF.2 – 2024 Distribution Overhead Feeder Hardening Installed

## Infrastructure Inspections

Tampa Electric's Infrastructure Inspection Program is a comprehensive inspection Program that combines the existing Commission approved Storm Hardening Plan Initiatives of: Wood Pole Inspections, Transmission Structure Inspections, and the Joint Use Pole Attachment Audit.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 14 OF 33 FILED: 05/14/2025

**Wood Pole Inspection Program:** Tampa Electric's Wood Pole Inspection Initiative is part of a comprehensive program initiated by the FPSC for Florida investor-owned electric utilities to harden the electric system against severe weather.

This inspection program complies with Order No. PSC-2006-0144-PAA-EI, issued February 27, 2006, in Docket No. 20060078-EI which requires each investor-owned electric utility to implement an inspection program of its wooden transmission and distribution poles on an eight-year cycle based on the requirements of the NESC. Tampa Electric has approximately 321,000 distribution and lighting wood poles and 25,000 wood and non-wood transmission poles available for inspection for a total pole inspection population of approximately 346,000. Approximately 12.5 percent of the known system will be targeted for inspections annually although the actual number of poles may vary from year to year due to recently constructed circuits, de-energized circuits, reconfigured circuits, etc. This program provides a systematic identification of poles that require repair, reinforcement, or replacement to meet strength requirements of the NESC.

The wood pole inspections will be conducted on a substation circuit basis with a goal of inspecting the entire wood pole population every eight years. An average of 35,625 wooden distribution poles will be inspected annually with each pole receiving a visual inspection, a sound & bore procedure, and a groundline/excavation inspection (except for chromated copper arsenate "CCA" poles less than 16 years of age.)

Inspection Method and Procedure: Tampa Electric will utilize three basic inspection procedures for determining the condition of wooden poles. These procedures include a visual inspection, sound, and bore, and excavation when required.

Visual Inspection: An initial visual inspection shall be made on all poles from the ground line to the pole top to determine the condition of the pole before any additional inspection work is completed. The visual inspection shall include a

14

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 15 OF 33 FILED: 05/14/2025

review of the pole condition itself and any attachments to the pole for conditions that jeopardize reliability and are in need of replacement, repair, or minor followup. After a pole passes the initial visual inspection, the balance of the required inspection methods will be performed.

Sound and Bore: After passing the visual inspection, the pole shall be sounded to a minimum height of seven feet above the ground line to locate any rotten conditions or pockets of decay inside the pole. Borings shall be made to determine the location and extent of internal decay or voids. All borings shall be plugged with preservative treated wooden dowels. After the pole has passed the sound and bore inspection, an excavation inspection will be performed, if required.

Excavation: For poles requiring excavation, the pole shall be excavated to a minimum depth of 18 inches below the ground line. Any external decay shall be removed to expose the remaining sound wood. The remaining pole strength shall be calculated.

For a pole in concrete or pavement where excavation is not possible, Tampa Electric will utilize a shell boring technique. This will consist of boring two 3/8-inch holes at a 60-degree angle to a depth of 16 to 18 inches below ground level. Upon withdrawing the drill bit, the technician will examine the condition of the wood shavings to determine whether decay is present. A "Shell Gauge" is used to determine the thickness of the shell, which is then used to calculate the pole strength. All borings shall be plugged as previously described.

Hardware Inspection: The inspector shall inspect all of Tampa Electric's guying, grounding provisions and hardware that is visible from the ground. Any deficiencies or problems will be corrected as directed or reported to Tampa Electric to correct.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 16 OF 33 FILED: 05/14/2025

Inspection and Treatment Labeling: After completion of the ground line inspection, an aluminum tag identifying the contractor and date of inspection shall be attached to the pole above the birthmark. Additionally, a tag shall be attached identifying any preservative treatments applied and the date of application.

Data Collection: The collected data shall be managed in a database and include information related to pole class, material, vintage, location, pole strength and any pole deficiencies that required follow-up actions, if any.

Inspection in Conjunction with Other Field Work: As part of day-to-day operations, operation personnel are at times required to climb poles to perform different types of field work. Prior to climbing any pole, personnel will assess the condition of the pole. This will include a visual check and may include sounding to determine pole integrity. This type of inspection will supplement the systematic inspection approach outlined in this pole inspection program.

Disposition of Poles: Poles with early-stage decay that do not require remediation to meet the NESC strength requirements shall be treated with an appropriate preservative treatment. Poles with moderate decay that have substantial sound wood shall be considered for reinforcement. Analysis shall be performed to determine if reinforcement will bring the deficient pole into compliance with the requirements of the NESC. If it is determined that the pole can be reinforced, the pole shall be treated with appropriate preservative treatment and may be reinforced or replaced if needed. Poles with advanced decay shall fail the inspection and be replaced.

Shared Poles: Tampa Electric supports the Commission's effort to establish pole inspection requirements on the owners of all utility poles. Tampa Electric will coordinate with third-party owners of utility poles that carry the company's facilities. With regard to the third-party's inspection process, the company will

16

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 17 OF 33 FILED: 05/14/2025

rely upon the third-party's inspection requirements and share data requested by the third-party to be utilized in their inspection procedure. Tampa Electric will cooperate, as requested, in the work associated with pole replacement where joint use exists. Third-party poles are visually inspected and sounded for internal decay. Issues found are provided to the third-party owner for resolution.

Chromated Copper Arsenate Pole Inspections: In Docket No. 20080219-EI, Order No. PSC-2008-0615-PAA-EI, issued September 23, 2008, the FPSC approved a modification to Tampa Electric's Wood Pole Inspection Program involving chromated copper arsenate ("CCA") poles. Specifically, the modification requires CCA treated poles less than 16 years of age to be sound and selectively bored. Selective boring shall be performed on poles suspected of internal decay. Additionally, one percent of the annual number of CCA treated poles inspected less than 16 years of age shall be excavated to validate this inspection method. Finally, all CCA treated poles over 16 years of age shall be excavated.

Reporting: Tampa Electric includes the Annual Wood Pole Inspection Report with the company's Annual Reliability Performance Reports, by March 1st of each year in full accordance with the reporting requirements set forth in Docket No. 20070634-El, Order No. PSC-2007-0918-PAA-PU, issued November 14, 2007.

**Transmission Inspections:** Tampa Electric's multi-pronged inspection approach for its transmission system supports a history of strong reliability performance. This approach includes the eight-year above ground structure inspection cycle, eight-year ground line wood inspection cycle, annual ground patrols, annual aerial infrared patrols, annual substation inspection cycle and the pre-climb inspection requirement. Tampa Electric also continually evaluates the appropriateness of its transmission structure inspection program to ensure that Tampa Electric can take advantage of any cost-effective storm hardening or reliability opportunities it finds.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 18 OF 33 FILED: 05/14/2025

Standardized reports are produced for each of the formal inspections. Deficiencies identified during the inspections are entered into a maintenance database. This maintenance database is used to prioritize and manage required remediation. Deficiencies identified during the pre-climb inspections are assessed by the on-site crew and reported to supervisory personnel for determination of corrective action.

Table TRA.1 shows the number of transmission inspections that were completed in 2024.

2024 Transmission Inspections			
Transmission Inspection Type	Number of Inspections (Circuits)	Number of Poles	
Groundline	17	125	
Ground Patrol	216		
Infrared Patrol	216		

TRA.1 – 2024 Transmission Inspections

**Pre-climb Inspections:** Tampa Electric crews are required to inspect wooden transmission & distribution poles prior to climbing. As part of these inspections, the employee is required to visually inspect each pole prior to climbing and sound each pole with a hammer if deemed necessary. These pre-climbing inspections serve to provide an additional safety-oriented integrity check of poles prior to the employee ascending the pole and may also result in the identification of any structural deterioration issues.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 19 OF 33 FILED: 05/14/2025

**Substation Inspections:** Tampa Electric performs inspections of all distribution and transmission substations multiple times throughout the year. The substation inspections include visual inspection of the substation fence, equipment, structures, control buildings and the integrity of grounding system for all equipment and structures. Table Sub.1 below shows the number of distribution and transmission substation inspections that were completed in 2024:

2024 Substation Inspections			
	Distribution Substations	Transmission Substations	
Number of Inspections	524	414	

Sub.1 – 2024 Substation Inspections

Joint-Use Pole Attachments Audits: Tampa Electric conducts comprehensive loading analyses to ensure the company's poles with joint use attachments are not overloaded and meet the NESC or Tampa Electric Standards, whichever is more stringent. These loading analyses are a direct effort to lessen storm related issues on poles with joint use attachments. All current joint use agreements require attaching entities to apply for and gain permission to make attachments to Tampa Electric's poles.

Due to the size of Tampa Electric's service area and the number of poles the company has, there will always be the potential for unknown foreign attachments to exist on facilities which could place additional loading on a facility which may create an overload situation. To help mitigate these potential overload situations, all Tampa Electric joint use agreements have provisions that allow for periodic inspections and/or audits of all joint use attachments to the company's facilities. In addition, all agreements have provisions that require the attaching party to build and maintain attachments within NESC guidelines or Tampa Electric specifications, whichever are more stringent. All of

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 20 OF 33 FILED: 05/14/2025

Tampa Electric's existing joint use agreements require attaching parties to receive authorization from the company prior to making all attachments to its facilities.

In 2024, the company reviewed all known attachment records and verified that the company has joint use agreements with all attaching entities. Tampa Electric has a total of 40 attachment agreements with attaching entities and continues negotiations with others requesting permission to attach to Tampa Electric poles.

Tampa Electric had steady requests for permit applications in 2024. This increase was impacted by various government funding programs available to the broadband companies. The company's Joint Use Department processed 127 pole attachment applications that encompassed 4,700 poles. As a result, 279 distribution poles were identified to be overloaded due to joint use attachments and 140 poles were overloaded due to Tampa Electric's attachments. Out of the 4,700 poles that were assessed through the pole attachment application process which includes a comprehensive loading analysis, there were 957 poles found to have NESC violations due to joint use attachments and no poles with NESC violations due to Tampa Electric attachments. All poles with NESC violations were either corrected by adjustments to attachments, pole replacements or joint use entities' removal of the attachments in violation.

An effort was made by third party "attachers" in 2024 to notify Tampa Electric of poles planned for over-lashing. Over-lashing occurs when a joint use entity attaches to an existing attachment without prior Tampa Electric engineering and authorization.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 21 OF 33 FILED: 05/14/2025

### Infrastructure Inspections Summary

The table below summarizes all of the 2024 Infrastructure Inspections.

2024 Infrastructure Inspections Summary			
	Projected	Actual	
Joint Use Audit - Note 1			
Joint Use Inspections	As needed	4,700	
Distribution			
Wood Pole Inspections	35,625	36,789	
Substation Inspections	All	524	
Transmission			
Wood Pole/Groundline Inspections	124	125	
Ground Patrols (circuits)	All	216	
Aerial Infrared Patrols (circuits)	All	216	
Substation Inspections	All	414	

Note 1: The Joint Use audit was completed in the first quarter of 2020

### **Legacy Storm Hardening Initiatives**

The final category of storm protection activities consists of legacy Storm Hardening Plan Initiatives that are well-established and steady state and for which the company did not propose any specific Storm Protection projects for inclusion in the company's 2022-2031 SPP. Tampa Electric continues these activities because the company believes they continue to offer the storm resiliency benefits identified by the Commission in Order No. PSC-2006-0351-PAA-EI, which required the company to perform these activities. In addition, these initiatives are all integrated into the company's ongoing operations.

**Geographic Information System:** Tampa Electric's Geographic Information System ("GIS") will continue to serve as the foundational database for all transmission, substation, and distribution facilities. Development and improvement of the GIS

21

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 22 OF 33 FILED: 05/14/2025

continues. All new computing technology requests and new initiatives are evaluated with a goal to eliminate redundant, exclusive and difficult to update databases as well as to place emphasis on full integration with Tampa Electric's business processes. These evaluations further cement GIS as the foundational database for Tampa Electric's facilities.

In 2024, Tampa Electric continued to implement changes and enhancements to the company's GIS system. These changes included data updates, plus metadata and functionality changes, to closer align with business processes and improve user performance.

**Post-Storm Data Collection and Forensic Analysis:** Tampa Electric has an established process in place to gather the necessary data for forensic analysis following a Category One or greater storm that significantly impacts the company's service area. This data will be used to determine the root cause of equipment failure after a storm event.

From these reports, recommendations and possible changes will be made regarding engineering, equipment and construction standards and specifications. A hired third party of data collection specialists will patrol a representative sample of the damaged areas of the electric system following a major storm event and perform the data collection process. At a minimum, the following types of information will be collected:

- Pole/Structure type of damage, size and type of pole, likely cause of damage.
- Conductor type of damage, conductor type and size, likely cause of damage.
- Equipment type of damage, overhead or underground, size, likely cause of damage.
- Hardware type of damage, size, and likely cause of damage.

Third party engineering personnel will perform the forensic analysis of a representative sample of the data obtained to evaluate the root cause of failure and assess future

22

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 23 OF 33 FILED: 05/14/2025

preventive measures where possible and practical. This may include evaluating the type of material used, the type of construction and the environment where the damage occurred including existing vegetation and elevations. Changes may be recommended and implemented if more effective solutions are identified by the analysis team.

In 2024, Tampa Electric's service areas were impacted by several Hurricanes. Hurricane Milton was the only one that was a Category One by the time it impacted the company's service area. A forensic analysis of 17 one-mile by one-mile grids, scattered throughout Tampa Electric's service territory, were assessed by a third party.

**Outage Data Differentiating Between Overhead and Underground Systems:** Tampa Electric tracks and stores the company's outage data for overhead and underground systems in a single database called the Distribution Outage Database ("DOD"). The DOD is linked to and receives outage data from the company's EMS and OMS. The DOD tracks outage records according to cause and equipment type and can support the following functionality:

- Centralized capture of outage related data.
- Analysis and clean-up of outage-related data.
- Maintenance and adjustment to distribution outage database data.
- Automatic Generation and distribution of canned reliability reports.
- Generating ad hoc operational and managerial reports.

The DOD is further programmed to distinguish between overhead and underground systems and is specifically designed to generate distribution service reliability reports that comply with Rule 25-6.0455, F.A.C.

In addition to the DOD and supporting processes, the company's overhead and underground systems are analyzed for accurate performance. The company also has established processes in place for collecting post-storm data and performing forensic analysis to ensure the performance of Tampa Electric's overhead and underground systems are correctly assessed.

23

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 24 OF 33 FILED: 05/14/2025

Increase Coordination with Local Governments: Tampa Electric representatives continue to focus on maintaining existing vital governmental contacts and participating on disaster recovery committees to collaborate on planning, protection, response, recovery and mitigation efforts. In addition, Tampa Electric representatives will continue to communicate and coordinate with local governments on vegetation management, search and rescue operations, debris clearing, and identification of critical community facilities. Tampa Electric will participate with local and municipal government agencies within its service area, as well as the Florida Division of Emergency Management ("FDEM") and the Florida Public Service Commission ("FPSC"), in planning and facilitating joint storm exercises. In addition, Tampa Electric will continue to work with counties to educate vulnerable populations on preparedness activities.

In 2024, Tampa Electric's Emergency Management Department ("EM") communication efforts continued to focus on local and state governments and agencies for all emergency management missions. Tampa Electric participated in training and/or mock storm exercises with Hillsborough, Pasco, Pinellas, and Polk counties, as well as the City of Tampa. In addition, Tampa Electric conducted its own series of internal exercises focused on storm surge modeling, refining emergency response plans and the implementation of technology to enhance communication during storm restoration.

In 2024, community focused communications included pre-hurricane season news releases to all major media outlets that serve Tampa Electric customers. All releases were posted on Tampa Electric's website. Hurricane guides were published in several major newspapers including the Tampa Bay Times, Centro (Spanish), and the Florida Sentinel Bulletin. In partnership with community stakeholders, Tampa Electric continued to promote its storm restoration video, Florida's Special Needs Registration, as well as promoting where customers can find flood zones and evacuation zones through a bill onsert and on the Storm Center section on the company's website. Yearly, Tampa Electric promotes information via customer bills on how to register with

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 25 OF 33 FILED: 05/14/2025

the state for special needs assistance and where to find information on flood and evacuation zones.

Emergency Operations Centers ("EOC") – Key Personnel Contact: In 2024, three named tropical weather events (Hurricanes Debby, Helene, and Milton) triggered various county and municipal agencies to activate their EOC at either full or partial activation levels to support emergency response activities. During Hurricane Debby, Tampa Electric representatives were partially or fully activated by some counties and municipalities in its service territory. For Hurricanes Helene and Milton, all County and municipal EOCs were fully activated. In addition, the State of Florida fully activated its EOC for these weather events.

The table below shows the activation levels for the tropical weather events by county or municipal EOC which covers Tampa Electric's service area:

EOC	Hurricane Debby	Hurricane Helene	Hurricane Milton
City of Oldsmar	Full	Full	Full
City of Plant City		Full	Full
City of Tampa	Partial	Full	Full
City of Temple Terrace		Full	Full
Hillsborough County	Full	Full	Full
Pasco County		Full	Full
Pinellas County	Full	Full	Full
Polk County		Full	Full
State of Florida	Full	Full	Full

Tampa Electric continues to work with local, state, and federal governments to streamline the flow of information and incorporate lessons learned to restore electric service as quickly and as safely as possible. Prior to June 1st of each year, the company reviews and updates its Emergency Response Plan to ensure Tampa Electric representatives are fully trained to support EOC activation.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 26 OF 33 FILED: 05/14/2025

Staffing Practices at Local EOCs: Tampa Electric provides representatives to each of the four County EOCs within the company's service territory, including Hillsborough, Pasco, Pinellas, and Polk counties. In addition, depending upon the magnitude of the event, representatives are provided to the four municipalities (Cities of Oldsmar, Plant City, Temple Terrace, and Tampa), when requested. The number of liaisons provided is dependent upon various factors (e.g., seating capacity at the EOC, amount of damage, EOC operating hours, available personnel, etc.). Lastly, representatives are also provided to support the State of Florida EOC to support the State and the FPSC for power restoration issues.

The company's representatives who staff the EOCs have business acumen and experience in customer service and/or electric distribution. Since the EOC representative role is not a day-to-day job function, the company strives to maintain a balance of seasoned and less experienced representatives during both day and night operations in the EOC when possible. EOC representatives are trained to deal with both electric and gas issues.

Staffing hours at the EOC are dictated by each EOC's operational periods and are dependent upon the magnitude of the event. EOCs have and may require company representatives to report for duty before the onset of tropical storm force winds and ride-out the storm at the EOC with other Emergency Support Function ("ESF") personnel. Initially, EOCs may, at their discretion, operate 24 hours/day until the event is stabilized. To support the 24-hour cycle, company staffing hours at EOCs are generally two, 12-hour shifts based on the EOCs operational cycle and vary by County; however, the hours of operation may be adjusted based on EOC needs and resource availability to support emergency response.

This table shows the number of company representatives available to support EOC activation. The table does not represent the number of representatives on-site at the same time.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 27 OF 33 FILED: 05/14/2025

Utility staffing practices at local EOCs			
EOC in Service Territory	Number of Utility Staff		
Hillsborough County	6		
Polk County	4		
City of Plant City	3		
City of Tampa	3		
City of Temple Terrace	3		
Pasco County	3		
City of Oldsmar	2		
Pinellas County	2		

The role of the company's EOC representative is to facilitate and respond to critical community issues in support of life safety and power restoration efforts. The representatives are responsible for maintaining situational awareness and communicating any public safety issues or concerns to the company. In addition, the representatives work closely with other ESF liaisons to facilitate or coordinate any requests made by the company or in support of community citizens. The representatives will utilize all available "lifelines" to respond to requests which originate from the EOC or company personnel. Lastly, the EOC representative communicates outage updates and provides restoration status, as requested.

The company has representatives dedicated to each of the county and municipal EOCs within its service territory, therefore there it is unlikely for an EOC to not be staffed. In the remote situation where an EOC representative is unavailable, the local EOCs have contact information for their assigned EOC representatives, as well as the company's EM personnel, which can be called upon for assistance. In addition, the company's Regional Affairs Department personnel have established relationships throughout the communities served and are also available to provide support, as needed.

27

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 28 OF 33 FILED: 05/14/2025

Assistance to Local Government: In 2024, Tampa Electric received requests from and deployed resources as follows: Hurricane Helene (Hillsborough County and Cities of Oldsmar and Temple Terrace) and Hurricane Milton (Hillsborough County and Cities of Oldsmar, Tampa, and Temple Terrace) for Search and Rescue Team assistance. In addition, resources were requested and provided to the City of Tampa to assist with debris clearing activities.

**Tree Ordinances, Planting Guides and Trip Procedures:** For 2025, the company's Manager of Line Clearance will continue to work with Tampa Electric's Regional Affairs staff to offer meetings with local government's staff on how Tampa Electric can best work with city staff in pre-storm and post-storm events and to better coordinate the company's tree trimming procedures with governmental ordinances.

**Utility's Coordination of Critical Facilities with local governments:** Tampa Electric works closely with County EM officials and other stakeholders throughout the year to identify and prioritize facilities deemed most critical to the overall health of the whole community (e.g., public health, safety, security, or national/global economy). Tampa Electric has discussions with EM officials through email and phone communications. The identification of public and private critical facilities during preparedness planning supports the goal of a coordinated and flexible restoration process for all critical infrastructure and is directly related to business continuity and continuity of the government. Critical facilities for municipalities are identified and incorporated into the respective County data.

The table below provides the dates that Tampa Electric had discussion with local governments during 2024 that involved critical facilities.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 29 OF 33 FILED: 05/14/2025

Meetings with Local Government				
Entity	Date(s)	Topics	Pending Issues/ Follow-up items	Contact Information Provided to Local Authorities
Hillsborough County	1/17/2024	Critical Facility	N/A	Yes
	1/24/2024	Discussion		
	2/19/2024			
	2/23/2024			
	3/01/2024			
	3/15/2024			
	3/25/2024			
Pasco County	3/06/2024	Critical Facility	N/A	Yes
	3/27/2024	Discussion		
Pinellas County	3/06/2024	Critical Facility	N/A	Yes
	3/08/2024	Discussion		
	3/11/2024			
Polk County	3/06/2024	Critical Facility	N/A	Yes
	3/13/2024	Discussion		
	3/22/2024			
	3/27/2024			

**Collaborative Research:** Tampa Electric will continue the company's participation in collaborative research efforts with Florida's other investor-owned electric utilities, several municipal utilities, and cooperatives to further the development of storm resilient electric utility infrastructure and technologies that reduce storm restoration costs and outages to customers.

This collaborative research is facilitated by the Public Utility Research Center ("PURC") at the University of Florida. A steering committee comprised of one member from each

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 30 OF 33 FILED: 05/14/2025

of the participating utilities provides the direction for research initiatives. Tampa Electric signed an extension of the memorandum of understanding with PURC in December 2018, effective January 1, 2019, for two years. The memorandum of understanding will automatically be extended for successive two-year terms on an evergreen basis until the utilities and PURC agree to terminate the agreement. Tampa Electric files the updated PURC Collaborative Research Report with the company's Storm Protection Plan Annual Status Report on June 1<sup>st</sup> of each year.

**Disaster Preparedness and Recovery Plan:** A key element in minimizing stormcaused outages is having a natural disaster preparedness and recovery plan. A formal disaster plan provides an effective means to document lessons learned, improve disaster recovery training, pre-storm staging activities, and post-storm recovery. The Commission's Order No. PSC-2006-0351-PAA-E1, issued on April 25, 2006, within Docket No. 20060198-E1 required each investor-owned electric utility to develop a formal disaster preparedness and recovery plan that outlines its disaster recovery procedures and maintain a current copy of its utility disaster plan with the Commission.

Tampa Electric will continue to be active in many ongoing activities to support the restoration of the system before, during and after storm activation. The company will continue to lead or support disaster preparedness and recovery plan activities such as planning, training, and working with other electric utilities and local government to continually refine and improve the company's ability to respond quickly and efficiently in any restoration situation.

Tampa Electric's EM plans address all hazards, including extreme weather events and are reviewed annually. Tampa Electric follows the policy set by TECO Energy for EM and Business Continuity which delineates responsibilities at the employee, company, and community levels.

Tampa Electric will also continue to plan, participate in, and conduct internal and external preparedness exercises, collaborating with government emergency

30

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 31 OF 33 FILED: 05/14/2025

management agencies, at the local, state, and federal levels. Internal company exercises focus on testing lessons learned from prior exercises/activations, new procedures, and educating new team members on roles and responsibilities in the areas of incident command, operations, logistics, planning, and finance. The scope and type of internal exercises varies from year to year based on exercise objectives defined by a cross-functional exercise design team, following the Homeland Security Exercise and Evaluation Program ("HSEEP"). External preparedness exercises are coordinated by local, state, and federal governmental emergency management agencies and partners. Tampa Electric personnel participate in these exercises to test the company's internal emergency response plans, including coordination with Emergency Operation Centers ("EOC"). Like Tampa Electric, the exercise type (tabletop, functional or full-scale) and scope varies from year to year, and depending upon the emergency management agencies' exercise objectives, Tampa Electric participants may or may not be included.

When requested, Tampa Electric participates in the State of Florida's mock storm exercise with the FPSC, which may coincide with exercises conducted by Hillsborough, Pasco, Pinellas, and Polk counties. In addition, municipalities within Tampa Electric's service area (Oldsmar, Plant City, Tampa, and Temple Terrace) may also host exercises and/or pre-storm season briefings. In 2024, Tampa Electric participated in training and/or mock storm exercises with Hillsborough, Pasco, Pinellas, and Polk counties.

In 2024, Tampa Electric participated in the following disaster preparedness and recovery plan committees which included in-depth coordination with local, state, and federal emergency management agencies and partners:

- Principal member of the National Fire Protection Association ("NFPA") 1660
   Committee on Emergency, Continuity, and Crisis Management
- Member of NFPA Technical Committee

31

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 32 OF 33 FILED: 05/14/2025

- Member of the Edison Electric Institute ("EEI") Business Continuity Leadership Team
- Member of the EEI Mutual Assistance Committee
- Member of the Electric Subsector Coordinating Council ("ESCC")
   Leadership Working Group
- Member of the Local Mitigation Strategy ("LMS")
- Member of Critical Facility Working Group to review restoration priorities
- Member of the Florida Statewide Mutual Aid Assistance ("MAA") Working Group
- Member of the Southeastern Electric Exchange ("SEE") Mutual Assistance
   Committee
- Member of the SEE Logistics Subcommittee
- Member of the SEE Vegetation Management Working Group
- Member of the Florida Emergency Preparedness Association ("FEPA")
- Member of the FEPA WebEOC Working Group
- Member of the Association of Contingency Planners ("ACP")
- Member of the International Association of Emergency Managers ("IAEM")
- Member of the Disaster Recovery Institute ("DRI") International
- Principal members of the "ASIS" International Society of Industrial Security

Tampa Electric continues to participate in internal and external preparedness exercises, collaborating with government emergency management agencies, at local, state, and federal levels.

**Distribution Pole Replacements:** Tampa Electric's distribution pole replacement initiative starts with the company's wood pole inspections and includes designing, utilizing conductors and/or supporting structures, and constructing distribution facilities that meet or exceed the company's current design criteria for the distribution system. The company will continue to appropriately address all poles identified through its Infrastructure Inspection Program.

TAMPA ELECTRIC COMPANY DOCKET NO. 20250010-EI EXHIBIT NO. KEP-1 WITNESS: PALLADINO PAGE 33 OF 33 FILED: 05/14/2025

**Overhead to Underground Conversion of Interstate Highway Crossings:** The continued focus of this activity is to harden limited access highway crossings to prevent the hindrance of first responders, emergency vehicles and others due to fallen distribution lines blocking traffic. The restoration of downed overhead power lines over interstate highways can be lengthy due to heavy traffic congestion following a major storm. Tampa Electric's current preferred construction standard requires all distribution line interstate crossings to be underground. Therefore, the company initially converted several overhead distribution line crossings to underground on major interstate highways. Through 2024, a total of 19 distribution crossings have been converted. Any remaining distribution interstate highway crossings will be converted to underground as part of the company's SPP or when construction and/or maintenance activities present opportunities.

#### Conclusion

Tampa Electric's 2024 Storm Protection Annual Status Report illustrates the company's ongoing commitment to enhancing the resilience and reliability of its electric utility infrastructure. Through the strategic implementation of the 2022-2031 Storm Protection Plan, Tampa Electric aims to minimize restoration costs and outage times associated with extreme weather events, delivering improved service reliability to customers. By focusing on practical and cost-effective measures, the company continues to meet the Florida Legislature's objectives, ensuring that the electric grid remains robust and capable of withstanding future challenges.