CENTERPOINT ENERGY
Transmission Planning Criteria
December 2023

Revision History

DATE	DESCRIPTION	APPROVED BY
January, 2000	New Document capturing existing procedure	Transmission Planning Manager
October, 2001	Revision 1	Transmission Planning Manager
May, 2004	Revision 2	Transmission Planning Manager
March, 2006	Revision 3	Transmission Planning Manager
December, 2015	Revision 4	Transmission Planning Manager
December 2018	Revision 5	Transmission Planning Manager
December 2023	Revision 6	High Voltage Planning Director

ERIC EASTON WORKPAPERS

WP EDE-1 Customer Growth 2018-2023

Number of Customers calculations:
Year End 2023 & 2018; Growth

	12/31/2023 from II-H-3.1	12/31/2018 from 49421 II-H-3.1	Growth 2018-2023
Residential	2,455,309	2,198,225	257,084
Commercial	306,163	285,116	21,047
Industrial	2,063	2,072	(9)
Total Metered	**2,763,535**	**2,485,413**	**278,122**

PUC DOCKET NO. 56211

APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR AUTHORITY TO CHANGE RATES	§ § §	PUBLIC UTILITY COMMISSION OF TEXAS

DIRECT TESTIMONY

OF

DAVID MERCADO

ON BEHALF OF

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC

MARCH 2024

TABLE OF CONTENTS

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym	Definition
ADMS	Advanced Distribution Management System
AFUDC	Allowance for funds used during construction
BJC	Bailey to Jones Creek
CenterPoint Houston	CenterPoint Energy Houston Electric, LLC
CCN	Certificate of Convenience and Necessity
Commission	Public Utility Commission of Texas
Company	CenterPoint Energy Houston Electric, LLC
CVR	Conservation voltage reduction
DOC	Distribution Operations and Control
EOP	Emergency Operations Plan
ERCOT	Electric Reliability Council of Texas
Final MCPR Estimated Cost	The updated estimated cost submitted in the last MCPR prior to 30 days before construction of a project listed in Schedule M
Initial MCPR Estimated Cost	The estimated cost of a project listed in Schedule M that was submitted in the initial MCPR.
ISO	Independent System Operator
kV	Kilovolts
MCPR	Monthly Construction Progress Report
NERC	North American Electric Reliability Corporation
O&M	Operations and Maintenance
RTO	Real Time Operations
STP	South Texas Project
SCADA	Supervisory Control and Data Acquisition

TAC	Texas Administrative Code
TA&S	Transmission Accounts and Support
Test Year	12 Months Ending December 21, 2023
TWS	Traveling Wave System

EXECUTIVE SUMMARY - HIGH VOLTAGE AND SYSTEM OPERATIONS DIVISION

(DAVID MERCADO)

CenterPoint Energy Houston Electric, LLC's ("CenterPoint Houston" or the "Company") High Voltage and System Operations Division constructs, operates, and maintains the Company's transmission and substation facilities and oversees transmission and distribution control center functions. My testimony supports the Company's capital investment and Operations and Maintenance ("O&M") expense as they relate to transmission and substation assets and day-to-day operations. Specifically, my testimony:

- provides an overview of the structure and functions of the High Voltage and System Operations Division;
- discusses operations in the High Voltage and System Operations Division since CenterPoint Houston's last base rate proceeding in Docket No. 49421;
- describes key programs and initiatives undertaken by the High Voltage and System Operations
- describes expense planning and cost control measures used in the High Voltage and System Operations Division
- supports the reasonableness and necessity of High Voltage and System Operations-related O&M expense incurred during the 12 months ended December 31, 2023 ("Test Year") in the amount of approximately $65.2 million; and
- supports the reasonableness and necessity of approximately $3.6 billion in transmission and substation capital investment placed in service from January 1, 2019 through December 2023.

Together with the cost-of-service data and testimony of the Company's other witnesses, my testimony and supporting materials demonstrate that the capital expenditures for the transmission and substation assets and Test Year O&M expense for High Voltage and System Operations are reasonable, necessary, and representative of the costs to provide service to customers of CenterPoint Houston and thus, should be included in the Company's

cost of service. In addition, I co-sponsor two schedules included as part of the Public Utility Commission of Texas' ("Commission") rate filing package.

DIRECT TESTIMONY OF DAVID MERCADO

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND POSITION.

A. My name is David Mercado, and I am employed by the Company as Vice President of High Voltage and System Operations.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I graduated from Rice University in 2003 with a Bachelor of Science degree in Electrical Engineering. I am a licensed professional engineer in the State of Texas, and I am certified with the North American Electric Reliability Corporation ("NERC") as a System Operator. I began my career with the Company in 2001. My positions within the Company have included Associate Engineer, Engineer, Senior Engineer and Staff Engineer in Transmission Planning, Lead Engineer and Supervising Engineer in Transmission System Protection, Supervising Engineer in Transmission Planning Special Studies, Manager of Real Time Operations Engineering and Director of Real Time Operations. I was named to my present position in 2022, at which time I assumed responsibility for High Voltage and System Operations of CenterPoint Houston.

Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?

A. As Vice President of High Voltage and System Operations, my responsibilities include overseeing the installation, operation, and maintenance of the transmission and substation facilities, and overseeing the command-and-control function of the Company's transmission and distribution systems.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of CenterPoint Houston.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony provides an overview of CenterPoint Houston's High Voltage and System Operations Division. I also support the overall reasonableness and necessity of the O&M expense for CenterPoint Houston High Voltage and System Operations in the Test Year and the prudence of capital investment in transmission and substation assets from January 1, 2019 through December 31, 2023.

Q. PLEASE DESCRIBE THE INTERACTION OF YOUR TESTIMONY WITH OTHER WITNESSES IN THIS CASE.

A. I am one of seven Company "operations" witnesses providing testimony to support the requested revenue requirement for the operations of the CenterPoint Houston's Electric Business Unit. At the end of the test year, CenterPoint Houston's Electric Business Unit in Texas consisted of six divisions: (1) Electric Engineering, (2) Distribution Operations and Service Delivery, (3) Grid Transformation and Investment Strategy, (4) High Voltage and System Operations, (5) Major Underground and Distribution Modernization, and (6) Strategic Business Growth and Engagement. Lynnae Wilson, the Senior Vice President in charge of the Electric Business Unit, provides an overview of the Business Unit, the dramatic load growth in our service area, and our efforts to maintain and improve the reliability and resiliency of our service. Eric Easton describes the Company's Grid Transformation and Investment Strategy Division and supports certain Test Year

O&M expenses associated with that division. My testimony describes and supports the requested Test Year O&M expense and capital investment for the High Voltage and System Operations Division, which generally encompasses the Company's high voltage transmission and substation assets as well as day-to-day operation of the system. Two other witnesses support the requested Test Year O&M expense and capital investment for the Company's distribution system. Randal M. Pryor covers the major underground distribution system and certain modernization programs, and Deryl Tumlinson covers the rest of distribution operations and service. Mandie Shook's testimony describes the engineering, planning, and design process for both the distribution and transmission system by the Electric Engineering Division. Finally, Rina Harris describes the Strategic Business Growth & Engagement Division and supports the Test Year O&M expenses associated with her division's efforts to attract new customers and engage with existing customers. The chart below provides a very high-level overview of the testimony of the Company's seven operations witnesses.

Overview of CenterPoint Houston Operations Witnesses

Witness, Title	Subjects Addressed
Lynnae Wilson, Senior Vice President, Electric Business Unit	• Overview of CenterPoint Houston and its operations; • Company's organizational and management structure and Company's commitment to its core values; • Summarize the Company's rate filing package, • The Company's efforts related to reliability and resiliency, and the impact of economic and customer growth in the Company's service territory since its last base rate case.
Eric Easton, Vice President, Grid Transformation & Investment Strategy	• How Distribution and Transmission Planning groups identify and develop future capital investment projects; • How capital investments are prioritized and optimized; • The reliability reporting process and various reporting tools that have been developed;

	• How the addition of a Capital Program Management department will support the efficient execution of capital projects and programs; • How the Strategic Coordination and Analysis department aligns strategic initiatives, identifies synergies, and improves interdepartmental coordination on projects; and • Supports the reasonableness and necessity of Grid Transformation & Investment Strategy-related Test Year O&M expense and capital investment since 2019 and the related schedules.
David Mercado, Vice President, High Voltage and System Operations	• Overview of the structure and functions of the High Voltage and System Operations Division; • Operations in the High Voltage and System Operations Division since 2019; • Key programs and initiatives undertaken by the High Voltage and System Operations; • Expense planning and cost control measures; and • Supports the reasonableness and necessity of High Voltage and System Operations-related Test Year O&M expense and capital investment since 2019 and the related schedules.
Randal M. Pryor, Vice President, Major Underground & Distribution Modernization	• MUG & Distribution Modernization division and the major programs and initiatives; • Implications for MUG & Distribution Modernization due to the growth the Company's distribution system has experienced since 2019; • Processes used to plan, monitor, and control investments and expenditures; and • Supports the reasonableness and necessity of Major Underground & Distribution Modernization-related Test Year O&M expenses and distribution capital investment since 2019 and the related schedules.
Deryl Tumlinson, Vice President, Distribution Operations & Service Delivery	• Distribution Operations and Service Delivery Division; • Quotidian activities and major programs and initiatives that drive distribution investment and expense; • Impacts and operational responses that occurred as a response to significant weather events; • Impact of supply chain disruptions; • Long lead-time asset purchases; and • Supports the reasonableness and necessity of Distribution Operations & Service Delivery-related Test Year O&M expenses and distribution capital investment since 2019 and the related schedules.
Mandie Shook, Vice President,	• Creation of the Electric Engineering Division; • Operations within the Electric Engineering Division;

Electric Engineering	• Major programs and initiatives that drive Electric Engineering investment and expense, including the reliability initiative and resiliency standards; • Planning and cost control programs within the Electric Engineering Division; • Supports the reasonableness and necessity of Electric Engineering-related O&M expense and capital costs incurred since 2019 and related schedules.
Rina Harris, Vice President, Strategic Business Growth & Engagement	• Functions of the Strategic Business Growth and Engagement Division; • Explains how the division is structured and staffed to enhance the customer service provided to large customers; • Steps taken to understand future customer needs so as to efficiently support large customer's growth and reliability needs; and • Supports the reasonableness and necessity of test year O&M costs.

In addition to the testimony of the seven Company operations witnesses, the testimony of two other Company witnesses supports the reasonableness and necessity of the Company's requested capital investment and Test Year O&M expenses for its transmission and distribution operations. Company witness L. Darren Storey discusses costs associated with support organizations and CenterPoint Energy Service Company, LLP that are allocated to the electric business unit, as well as the Company's overall planning and budgeting process and cost of service adjustments.

II. OVERVIEW OF THE HIGH VOLTAGE AND SYSTEM OPERATIONS DIVISION

Q. PLEASE DESCRIBE THE HIGH VOLTAGE AND SYSTEM OPERATIONS DIVISION'S PRIMARY FUNCTION AND OBJECTIVES.

A. High Voltage and System Operations is responsible for the construction, operation, and maintenance of the Company's transmission and substation facilities and the command-and-control function of the Company's transmission and distribution

systems. These departments work together and are necessary to provide safe and reliable electric service in compliance with all applicable laws and regulations.

A. HIGH VOLTAGE & SYSTEM OPERATIONS DIVISION DEPARTMENTS

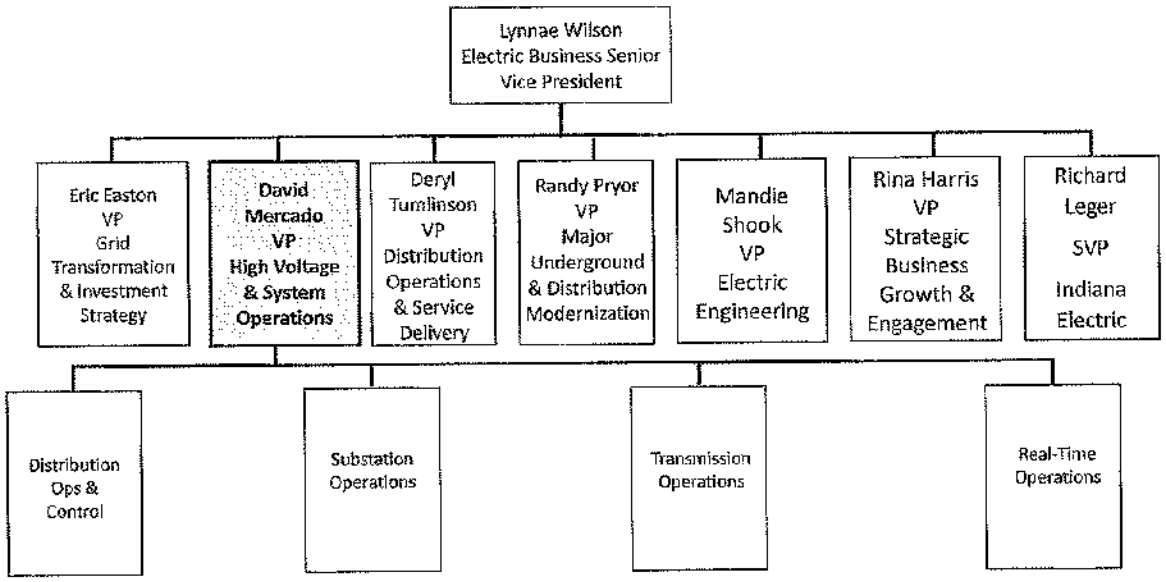
Q. HAVE THERE BEEN CHANGES TO THE STRUCTURE OF THE HIGH VOLTAGE DIVISION SINCE DOCKET NO. 49421?

A. Yes. In 2022, the Electric Business Unit was reorganized, including the High Voltage Division.

Q. WHAT IS THE BASIC STRUCTURE OF THE HIGH VOLTAGE AND SYSTEM OPERATIONS DIVISION TODAY?

A. The High Voltage and System Operations Division has four departments. As shown in Figure DM-1, the departments are Distribution Operations and Control ("DOC"), Substation Operations, Transmission Operations, and Real Time Operations ("RTO"). I describe each department in the following sections of my testimony.

Figure DM-1: Organizational Chart of High Voltage and System Operations



Q. HOW DO THESE DEPARTMENTS OPERATE TOGETHER ON A DAY-TO-DAY BASIS?

A. DOC, Substation Operations, Transmission Operations, and RTO work together to build and operate high voltage assets within CenterPoint Houston's delivery system and perform monitoring and control functions to both our transmission and distribution systems. High Voltage and System Operations is responsible for delivering power from all over the Electric Reliability Council of Texas ("ERCOT") power region to high voltage industrial customers and CenterPoint Houston-owned substations, where CenterPoint Houston's distribution system then delivers the power to customers connected to the distribution system (e.g. residential and commercial customers). These four departments coordinate and

collaborate daily to provide safe, robust, reliable, and resilient electric grid operations and electric service to our customers.

1. DISTRIBUTION OPERATIONS AND CONTROL DEPARTMENT

Q. PLEASE DESCRIBE THE MAIN FUNCTIONS OF THE DOC DEPARTMENT.

A. DOC is responsible for the safe and reliable operation of the CenterPoint Houston distribution system that serves more than 2.8 million metered customers in CenterPoint Houston's service territory, which covers Houston and its surrounding communities. The work includes the operation of distribution control centers, which are physically separated to ensure fully active failover capabilities of all critical systems. This function requires 24/7 monitoring of all distribution assets in near real time systems, providing proactive and reactive switching orders, clearances and outages. DOC also dispatches trouble and customer service orders for maintenance and market transactions. These operations are performed via automated distribution management systems, 900 megahertz ("MHZ") radio, and fully automated switching capabilities via telemetered substation and distribution equipment. The department also consists of an outage support group responsible for all testing, training, and rollout assistance with the Advanced Distribution Management System ("ADMS") and Service Suite (mobile data application for dispatching purposes), direct support for training, reporting and issue-resolution for the dispatchers, tracking and reporting on distribution development plan construction work, performing quality assurance on all outage events to make sure the duration and customer count is correct, and providing specialized reporting

from the ADMS system. In addition to distribution dispatching and outage support, DOC manages Distributed Energy Resource interconnections.

Q. HOW DOES DOC PERFORM ITS RESPONSIBILITIES?

A. DOC is comprised of full-time employees that work primarily with secure server systems that operate programs which control the local distribution system. These employees operate in a secure environment within a control room that is fully monitored and secured in a 24/7/365 environment. The complexity and security needs of this system make it imperative to keep this part of the operation within the full operational scope of full-time employees. The Distributed Generation team within DOC leverages contract support specialists to assist with processing Distributed Energy Resource interconnection applications as needed.

Q. HOW DOES DOC WORK WITH THE OTHER DIVISIONS AND THE OTHER HIGH VOLTAGE DEPARTMENTS?

A. DOC works with the other High Voltage departments to operate the distribution system within the CenterPoint Houston service territory. The interaction between departments takes place specifically within the scope of the substation high voltage step down transformers that step the bulk transmission voltage down to distribution voltages for service to our customers. The distribution breaker, located on the high voltage side of the distribution transformer and separates these systems, is operated by the RTO department, which controls the high voltage equipment within the Company. DOC also coordinates with RTO for requests by a distribution crew to disable reclosing on a substation breaker. In the event that there are crews in a substation, DOC verifies with RTO that work crews are in the clear prior to

applying the work tag. DOC performs a variety of operational tasks including: dispatching, routing, and monitoring of crew activities to ensure timely completion of customer service orders, planned work and unexpected customer outages. DOC receives, processes, and executes requests to perform work on the distribution grid. These activities include analyzing maps of the distribution grid and work area, designing a switching schedule to provide safe workspace for crews performing maintenance or repairs and to reduce outage impacts, coordinating the switching schedule in real time with a variety of crews, and maintaining documentation on those activities to support a real time map of the distribution grid. DOC also performs similar actions to unplanned distribution level outages that occur within the CenterPoint Houston service territory.

Q. DOES THE DOC DEPARTMENT HAVE ANY INTERNAL WORK GROUPS?

A. Yes. DOC is comprised of three separate work groups: Distribution Control, Outage Support, and Distributed Generation. Distribution Control is responsible for the safe and reliable operation of the CenterPoint Houston distribution system. Outage Support is responsible for all testing, training, and rollout assistance with the ADMS and Service Suite, and provides direct support for training, reporting and issue resolution for dispatchers. Distributed Generation manages residential and commercial customer applications, customer online interconnection technology, and supports the PUC rulemaking for distributed energy resources.

2. SUBSTATION OPERATIONS DEPARTMENT

Q. WHAT ARE THE RESPONSIBILITIES OF THE SUBSTATION OPERATIONS DEPARTMENT?

A. Substation Operations is responsible for performing tasks necessary for the reliable operation of the bulk electric system. These tasks include but are not limited to the commissioning and maintenance of equipment within and peripheral to substations as well as the application of corrective procedures on that equipment.

Q. PLEASE DESCRIBE THE SPECIFIC TASKS PERFORMED BY SUBSTATION OPERATIONS.

A. Substation Operations' tasks include transmission and distribution line protection through the application of protective relaying principles utilizing micro-processor-based and electromechanical relaying. Due, in part, to high costs and prolonged procurement periods for auto and power transformers, Substation Operations performs meticulous testing on this equipment to mitigate the need for replacements. In addition, Substation Operations performs time-based preventive maintenance procedures for substation transformers, which includes insulation testing and dissolved gas analysis of the main tank and load tap changers. The Company's Supervisory Control and Data Acquisition ("SCADA") systems, in part, gather and analyze real time data and provide an avenue for monitoring and controlling equipment within substations. Detailed commissioning and maintenance procedures are also performed on SCADA equipment. Transmission and distribution-level circuit breakers are integral to the collective and reliable operation of the electric system. Substation Operations not only commissions and maintains this equipment, but also compiles data on sulfur hexafluoride purchases and recycle quantities to calculate and submit greenhouse gas emissions for annual inclusion into the Environmental Protection Agency on-line Greenhouse Gas

Reporting Tool. Additional areas of focus within Substation Operations include compliance-driven activities, substation security, storm preparedness and the application of Blackstart principles and procedures.

Q. HOW DOES SUBSTATION OPERATIONS PERFORM ITS RESPONSIBILITIES?

A. Substation Operations primarily uses Company employees to commission, maintain and repair substation facilities. The commissioning process verifies that all of the electrical equipment within the substation perimeter is tested to ensure optimal design functionality. Major maintenance activities include work processes in distinct areas, including but not limited to protective relay calibration, transformer servicing and oil filtration, insulation testing, substation battery examination, and telecommunications functionality. Construction personnel are primarily used on capital projects. Their functions include scheduling capital projects for current and upcoming years, as well as the procurement of contractors for applicable projects. They are also mobilized to address any substation emergency repairs which may emerge. Additional aspects addressed by Substation Operations personnel include regulatory compliance, information technology, and facilitating the deployment of mobile generation during emergencies.

Q. HOW DOES SUBSTATION OPERATIONS WORK WITH THE OTHER CENTERPOINT HOUSTON DIVISIONS AND HIGH VOLTAGE DEPARTMENTS?

A. Substation Operations coordinates with the Transmission Operations department. This includes communication in the areas of design, commissioning,

scheduled transmission-level outage coordination, and emergency troubleshooting and repairs. Substation Operations coordinates these same functions with the Major Underground Group at the distribution voltage level. Substation Operations communicates with the RTO department on a daily basis twenty-four hours a day and works with RTO to schedule all daily maintenance outages and emergency repairs. RTO monitors substation equipment alarms during regular and after-hour periods and notifies Substation Operations personnel that remedial action may be required. Subsequently, Substation Operations supervisors dispatch field operations personnel to the affected location when it is deemed that immediate action is required. Substation Operations works in tandem with the DOC group as required. This includes communication in the areas of design, commissioning, scheduled outage coordination, and emergency troubleshooting and repairs, at the distribution voltage level. Installation of mobile substations and the resolution of emergency station and feeder overloading are also addressed within this department. Communication with the Substation Engineering group within the Electric Engineering Division with respect to consultation analysis also occurs frequently. Communication with the Policy and Compliance group is also necessary to ensure Substation compliance with any current or forthcoming regulatory requirements. Shared functions with the Environmental Group include the dissemination of information relating to greenhouse gas emissions reporting to the EPA.

Q. DOES THE SUBSTATION OPERATIONS DEPARTMENT HAVE ANY INTERNAL WORK GROUPS?

A. Substation Operations primary functions include operational oversight of all CenterPoint Houston-owned substations including the commissioning, maintenance, and repair of substations. Substation Operations is divided into two groups, Substation Construction and Substation Maintenance. Substation Construction personnel are primarily used on capital projects. Their functions consist of scheduling construction projects for current and upcoming years, as well as the procurement of electrical contractors for applicable projects. Substation Maintenance technicians are trained in varying aspects of technological applications which include, but are not limited to, transmission line protection, circuit breaker operation, transformer oil service and repair, diagnostic testing and SCADA.

3. TRANSMISSION OPERATIONS DEPARTMENT

Q. PLEASE DESCRIBE THE MAIN FUNCTIONS OF THE TRANSMISSION OPERATIONS DEPARTMENT.

A. Transmission Operations is responsible for the construction, operation, and maintenance of the Company's transmission facilities.

Q. HOW DOES TRANSMISSION OPERATIONS PERFORM ITS RESPONSIBILITIES?

A. Company employees perform most of the Transmission Operations routine work, but for large maintenance or construction projects we also use contractors. Transmission Operations determines the scope of work to be performed, manages the bid selection process for contractors, ensures quality control of project construction, and ensures payment to contractors for services rendered.

Q. HOW DOES TRANSMISSION OPERATIONS WORK WITH THE OTHER CENTERPOINT HOUSTON DIVISIONS AND HIGH VOLTAGE DEPARTMENTS?

A. Transmission Operations works closely with the Electric Engineering Division to schedule projects, develop cost estimates, and track progress against these cost estimate controls throughout the project. Additionally, Transmission Operations coordinates with RTO to schedule work during ERCOT-approved outage times, when necessary.

Q. DOES THE TRANSMISSION OPERATIONS DEPARTMENT HAVE ANY INTERNAL WORK GROUPS?

A. Yes. Transmission Operations is comprised of three separate work groups: Transmission Field Operations, Transmission Contracting Services, and Transmission Services. Transmission Field Operations is responsible for the reliable and safe operation of the electrical transmission system as well as providing support for operation of the distribution system and other essential equipment within the service area. Transmission Contracting Services is responsible for conducting work scheduling and review of various aspects of transmission and distribution work performed by construction contractors to ensure compliance with specifications, safety rules, Occupational Safety and Health Administration Standards, and scheduled completion. Transmission Services is responsible for performing field inspections of transmission right-of-way facilities including working with contractors to resolve issues, monitoring work performed in the

right-of-way by other companies, and conducting analysis of internal and third-party documents relevant to Distribution construction or third-party pipelines.

4. RTO DEPARTMENT

Q. WHAT ARE THE MAIN FUNCTIONS OF THE RTO DEPARTMENT?

A. RTO maintains and operates the Company's primary and back-up control centers, which support operations of the CenterPoint Houston transmission system under the oversight of the ERCOT ISO. In cooperation with and under the direction of the ERCOT ISO, RTO monitors transmission network conditions and performs control actions to ensure reliability in compliance with ERCOT Operating Guides and NERC Reliability Standards.

Q. HOW DOES RTO PERFORM ITS RESPONSIBILITIES?

A. CenterPoint Houston RTO employees operate 24 hours a day, every day, including weekends and holidays. CenterPoint Houston system controllers are certified under the NERC System Operator Certification Program.

Q. HOW DOES RTO WORK WITH THE OTHER CENTERPOINT HOUSTON DIVISIONS AND HIGH VOLTAGE DEPARTMENTS?

A. RTO coordinates with internal Company departments and various external organizations, such as large industrial customers or generators, on scheduling outages to support construction and maintenance activities, subject to ERCOT review and approval. RTO also coordinates with Substation Operations and Transmission Operations daily utilizing switching orders to operate equipment and issue clearances which assures the recipient that all known sources of feed have been removed and will remain in such state resulting in a safe working environment. RTO also reviews future projects and coordinates with Transmission

Planning, Transmission Operations, Substation Operations, and Engineering, to provide support in determining priority and gives input on preliminary project scopes and designs. Engineers and technical support personnel support RTO by evaluating reliability impacts and coordinating scheduled transmission element outages, initiating updates to CenterPoint Houston and ERCOT transmission system operational models, evaluating and assisting with operating concerns, and assisting with training and reliability compliance documentation.

Q. **DOES THE RTO DEPARTMENT HAVE ANY INTERNAL WORK GROUPS?**

A. Yes. The RTO department is comprised of five separate work groups: Transmission Accounts and Support ("TA&S"), RTO Engineering, Outage Scheduling, System Operations, and Grid Training. TA&S serves as the single point of contact for all existing and prospective load and generation transmission customers related to day-to-day operations, project development and contract negotiation/administration. RTO Engineering provides engineering support to the various other work groups within the RTO department. Examples of engineering support actions include technical analysis of system events, coordination with ERCOT on system events and engineering solutions, outage analysis to support construction coordination, technical insight into training materials, and operational analysis of customer performance and events. Outage Scheduling is responsible for coordinating and managing transmission outages. The team coordinates with ERCOT, maintenance groups, and construction coordinators to secure outage times for both CenterPoint Houston-owned and transmission customer-owned assets.

Systems Operations provides 24/7 monitoring and control of the transmission system. Grid Training oversees the onboarding of new controllers and the continuous training and NERC certification of controllers and RTO operations personnel.

B. OPERATIONS SINCE DOCKET NO. 49421

Q. HAVE THERE BEEN ANY CHANGES IN THE HIGH VOLTAGE AND SYSTEM OPERATIONS DIVISION SINCE THE COMMISSION LAST CONDUCTED A COMPREHENSIVE BASE RATE REVIEW FOR CENTERPOINT HOUSTON?

A. Yes. The test year in Docket No. 49421 ended December 31, 2018. Since that time, CenterPoint Houston has remained committed to delivering safe and reliable electric delivery service to its customers—this commitment never has and never will change. However, a number of factors have impacted operational changes in the High Voltage group including transmission load growth; increased rate of generator interconnection requests (which is discussed later in my testimony); enhancements to efficiency, safety and reliability; and supply chain disruptions.

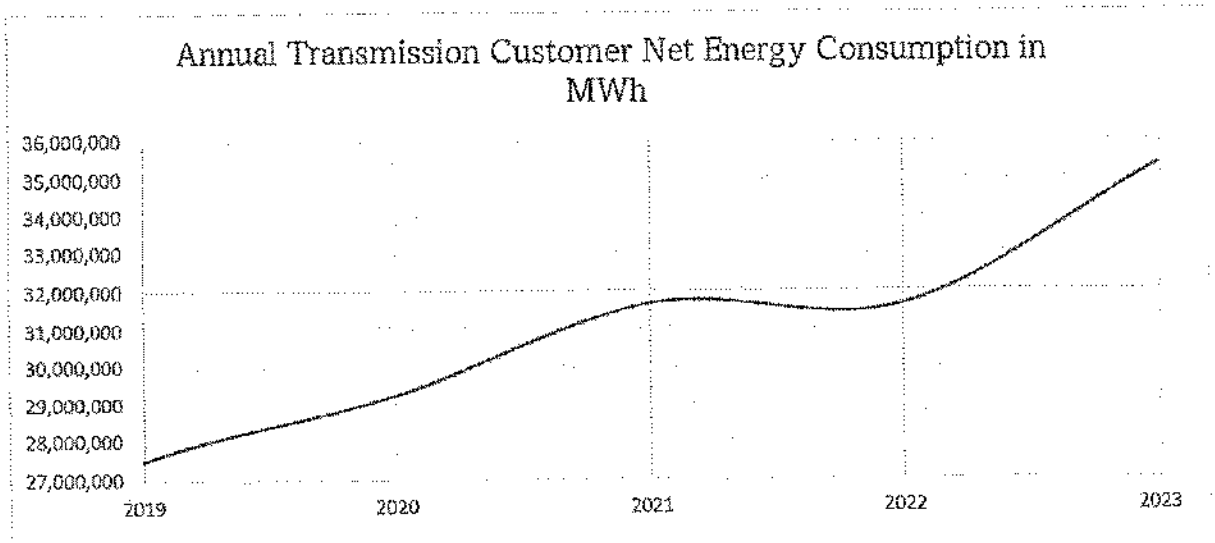
Q. PLEASE DESCRIBE THE TRANSMISSION LOAD GROWTH THE COMPANY HAS SEEN IN ITS FOOTPRINT SINCE JANUARY 1, 2019.

A. Since 2019, the Company has interconnected ten new customer-owned substations to the transmission system. Five of those ten interconnections were completed in 2019, four were completed in 2021 and one was completed in 2022. As seen in Figure DM-2, CenterPoint Houston's net energy consumption on the transmission increase by 28% between 2019 and 2023. Company witnesses Lynnae Wilson,

Deryl Tumlinson and Randal Pryor further discuss the growth on CenterPoint Houston's overall system.

Figure DM-2:
CenterPoint Houston

Annual Transmission Customer Net Energy Consumption in Megawatt-Hours ("MWh")



Q. CAN YOU PROVIDE SOME EXAMPLES OF THE AREAS WITHIN CENTERPOINT HOUSTON'S SERVICE TERRITORY THAT HAVE REQUIRED INVESTMENT DUE TO GROWTH?

A. Yes. Between Summer 2018 and Summer 2023, the non-coincident peak load total for transmission customer load grew from 3,587 megawatts ("MW") to 5,605 MW, a 56% growth rate. The most significant growth areas since January 1, 2019, include Freeport, Mt. Belvieu, and the Houston Ship Channel, where there is a large liquified natural gas and chemical refining presence. The vast majority of the load growth in this timeframe occurred in the Freeport area.

Q. HAS THIS INDUSTRIAL GROWTH BEEN LIMITED TO AREAS THAT HAVE A HIGH CONCENTRATION OF TRANSMISSION INFRASTRUCTURE?

A. No. Since the Company's last rate proceeding, CenterPoint Houston has experienced tremendous industrial growth not only within the well-developed areas of our service territory, but also in geographic areas where transmission infrastructure is less concentrated. For example, the Freeport area experienced a high level of load growth. In response to this load growth, CenterPoint Houston constructed several transmission system upgrades, the largest of which was the Freeport Master Plan set of projects that included a new autotransformer, multiple transmission cap banks, 345 kilovolt ("kV") line upgrades and the new 345 kV Bailey – Jones Creek double circuit transmission line. CenterPoint Houston also completed several projects in the Mt. Belvieu area including the Mt. Belvieu Reliability Project that added a new 138 kV circuit as well as several 138 kV transmission circuit upgrades. In addition, a new Jordan 345/138 kV autotransformer was installed to help serve industrial load in the Mt. Belvieu area. The Company also anticipates that future hydrogen projects that may be sited in the Company's service area will contribute to industrial load growth.

Q. HOW HAVE THESE NEW, LESS DEVELOPED INDUSTRIAL SITES IMPACTED THE COMPANY'S INVESTMENT IN THE TRANSMISSION SYSTEM?

A. To serve new, less developed industrial sites, the Company had to make significant capital investments in its transmission system. High Voltage load growth

investment projects include building new transmission substations, transformer additions at existing substations, upgrading 69 kV lines to 138 kV, and rebuilding and reconductoring existing lines to accommodate the additional capacity.

Q. WHAT CHANGES HAS THE HIGH VOLTAGE AND SYSTEM OPERATIONS DIVISION INSTITUTED TO IMPROVE EFFICIENCY, SAFETY, AND RELIABILITY?

A. The High Voltage division has introduced a number of innovative changes aimed at improving efficiency, safety, and reliability since its last rate case.

- Substation Operations has modified maintenance intervals of substation checks to align with ERCOT summer and winter weatherization guidelines. Additionally, supplementary required training of substation field personnel and time allocated for audits increase the reliability of the bulk electric system.

- Substation Operations has initiated the installation of conservation voltage reduction ("CVR") automation. ERCOT may request the Company to enact CVR to help reduce demand during energy emergency alert conditions. Automating the CVR process enables the quick and efficient execution of ERCOT's request to enact CVR which previously involved physically dispatching crews to multiple substations.

- To improve fault location efficiency, Substation and Transmission Operations continue the deployment of the Traveling Wave System ("TWS") on high voltage transmission circuits to provide faster and improved fault location accuracy to within one span to aid transmission line patrols in finding the root cause of line faults and to begin restoration of circuits faster. Through the end of 2023, TWS has been installed on 100% of 345 kV and 85% of 138 kV circuits.

- DOC has conducted a comprehensive analysis, redesign, and development of our First-Year Distribution Controller Training program resulting in improved safety and efficiency.

- Additionally, the intake and execution of distribution switching orders has been improved by incorporating the new critical required fields, peer review checks, visual progress tracking, and staged gate checks. This enhancement coupled with integration auto attaches work orders and maps for quality checks and proficiency gains.

- Improvements have been made to RTO's Load Shed software tool to include load available to be shed in UFLS blocks (Blocks 1, 2 and 3) while still maintaining the minimum UFLS requirements in increments that allow for load rotation to the extent that the ERCOT instructed amount makes it possible. The use of Temporary Emergency Electric Energy Facilities also aids in load shed support by relieving load connected to the ERCOT grid during a load shed event. These improvements expand the total amount of available load shed for an ERCOT-issued load shed directive and provide additional rotational flexibility.

Q. HOW HAVE SUPPLY CHAIN DISRUPTIONS AFFECTED THE HIGH VOLTAGE DIVISION?

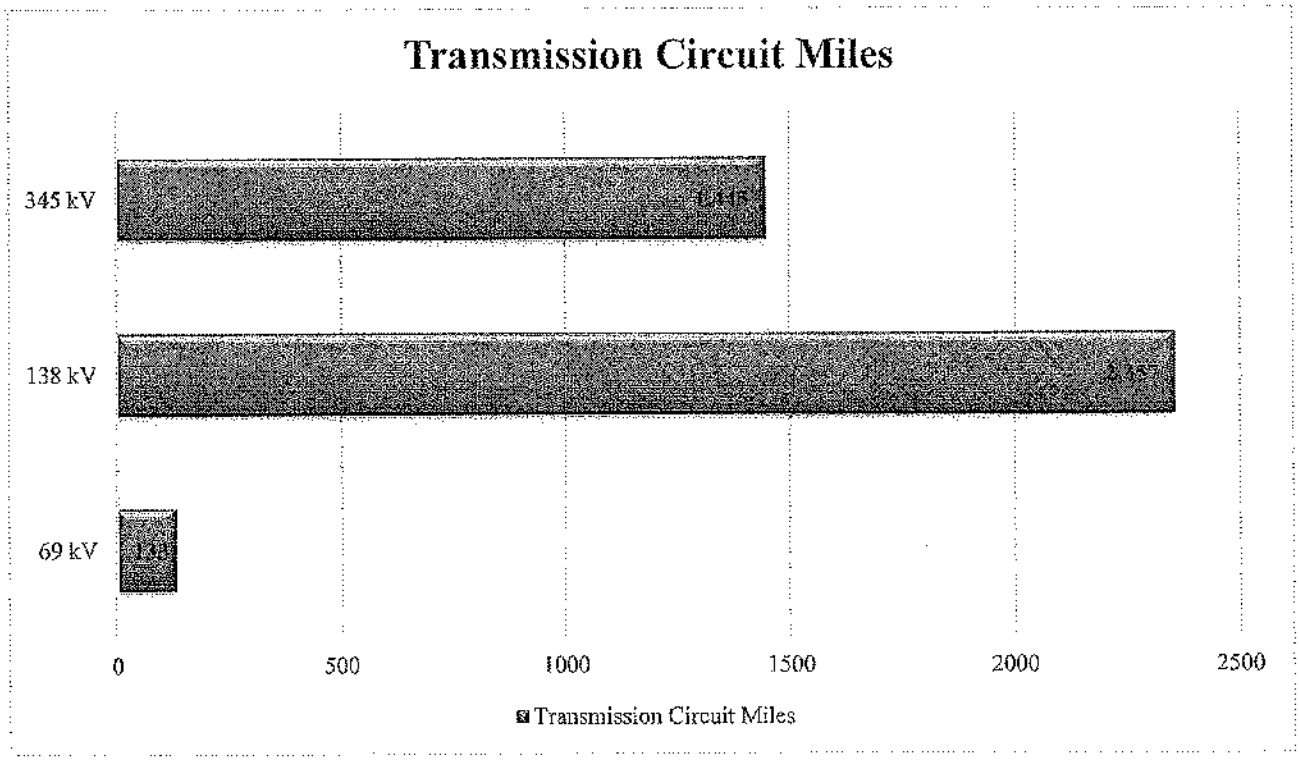
A. Supply chain challenges have increased significantly since the onset of the COVID-19 pandemic. Some of the challenges the Company experienced were the reduced number and availability of qualified vendors, material shortages affecting vendor manufacturing of equipment, longer lead-times for major equipment, and increases in material costs. These challenges can complicate construction schedules, O&M repairs and outage coordination. The High Voltage Division's mitigation tactics include cross-functional efforts to bring in additional suppliers/manufacturers, increasing manufacturing QA/QC inspections and establishing temporary and permanent inventory strategies. Impacts to other divisions within the Electric Business Unit are addressed by Company witnesses Randal Pryor, Eric Easton, and Mandie Shook. Company witness Carla Kneipp also addresses supply chain issues and the steps the Company has taken to address them.

III. TRANSMISSION SYSTEM OVERVIEW

Q. WHAT ASSETS MAKE UP THE COMPANY'S TRANSMISSION DELIVERY SYSTEM?

A. The electric transmission delivery system is the portion of the Company's electric system that operates at high voltage - voltages of 60 kV or higher. The transmission delivery system consists of transmission lines, including the associated towers, poles, conductors, insulators and other components; the Company's transmission control center; and various equipment at electrical substations, including the associated circuit breakers, transformers, capacitors, switches, SCADA equipment, and relay control equipment. As shown in Figure DM-3, as of December 31, 2023, CenterPoint Houston owned 3,936 circuit miles of overhead and underground transmission lines, including 133 circuit miles operated at 69 kV; 2,357 circuit miles operated at 138 kV; and 1,445 circuit miles operated at 345 kV. Power is transmitted via the transmission system to 259 substations owned by CenterPoint Houston, 154 substations owned by third parties (where large end-use customers are provided electric service at transmission voltage levels), as well as other transmission systems within the ERCOT region. At distribution substations, "step-down" transformers further reduce the voltage level of the power system to CenterPoint Houston's standard primary distribution voltages of 12 kV and 35 kV.

Figure DM-3: CenterPoint Houston Transmission Circuit Miles by Voltage



Q. WHERE DOES THE TRANSMISSION SYSTEM END AND THE DISTRIBUTION SYSTEM BEGIN?

A. The transmission system ends, and the distribution system begins, at the high side bushings of the transmission-to-distribution voltage transformers. The transmission-to-distribution voltage transformers are considered distribution equipment but are maintained by my organization. The functions of the distribution system are explained in Mr. Tumlinson's testimony.

Q. HOW ARE THE FACILITIES WITHIN SUBSTATIONS ALLOCATED BETWEEN TRANSMISSION COSTS AND DISTRIBUTION COSTS?

A. 16 Texas Administrative Code ("TAC") § 25.192(c)(1) defines facilities that are deemed to be transmission assets. The Company determines the allocation of assets between transmission and distribution plant in-service based on that rule. As such,

the power transformers that transfer energy from transmission voltage facilities (69 kV and above) to distribution voltage facilities (35 kV and below) are allocated to distribution plant in-service. Except for certain distribution voltage capacitor banks as described in 16 TAC § 25.192, electrical facilities in the substation operated at distribution voltage are allocated to distribution plant in-service and electrical facilities in the substation operated at transmission voltage are allocated to transmission plant in-service. Facilities that support the underlying transmission or distribution electrical facilities, such as foundations, control cable, conduit, and relay panels, are allocated based on the electrical facility they support.

Q. PLEASE DESCRIBE THE LARGEST TRANSMISSION PROJECT CENTERPOINT HOUSTON HAS COMPLETED SINCE 2019.

A. The largest transmission interconnection project completed between 2019 and the end of the test-year was the Bailey to Jones Creek Project ("BJC"), a 53.5-mile, 345 kV double circuit line extending from the Bailey substation in Wharton County to the Jones Creek substation in Brazoria County. The project was energized in November 2021. The BJC project was part of the Freeport Area Master Plan. CenterPoint Houston's Transmission Planning department studied the needs for the Freeport area, which experienced explosive growth from 2012 to 2016 due to the additions of large industrial customers. That growth was expected to continue through 2022. CenterPoint Houston submitted the Freeport Area Master Plan proposal to ERCOT in April 2017 to meet the near-term and long-term needs for the area. ERCOT performed an Independent Review of the proposal and confirmed the need for a project. ERCOT analyzed five options and determined that the

following set of improvements for near-term (Bridge the Gap Upgrades) and long-term (Option 3) represented the most cost-effective solution to meet the reliability needs for the area.

Bridge the Gap Upgrades:

- Loop the 345 kV South Texas Project ("STP") – Dow-Velasco circuit 27 into the Jones Creek substation (approximately 0.9 mile);
- Install 7-ohm in-line reactors at the Jones Creek substation on the 345 kV STP – Jones Creek circuits 18 and 27;
- Install a third 345/138 kV 800/1000 MVA autotransformer at the Jones Creek substation;
- Install a fourth 138 kV capacitor bank (120 MVAr) at the Jones Creek substation;
- Install the first 138 kV automatically switchable capacitor bank (140 MVAr) at Jones Creek substation; and
- Install a second 138 kV automatically switchable capacitor bank (140 MVAr) at Jones Creek substation.

Option 3 - BJC Project:

- Construct a new, approximately 53-mile 345 kV double circuit transmission line from the Bailey substation to Jones Creek substation (2988 MVA emergency rating); and
- Upgrade the 345 kV Dow-Velasco to Jones Creek circuits 18 and 27, which total approximately 3 miles (minimum 1700 MVA emergency rating).

An application to amend CenterPoint Houston's certificate of convenience and necessity ("CCN") was filed with the PUC on September 12, 2018, with 30 proposed alternative routes. The PUC required ERCOT to review the original options plus five others to see if BJC was still the lowest cost option that solved reliability concerns. Ultimately, CenterPoint Houston filed an Unopposed Stipulation Agreement on August 15, 2019, in which the parties agreed to Alternative Route 5. The PUC issued the Final Order approving the project on November 21, 2019.

Q. WERE THE COMPANY'S EFFORTS RELATED TO THE BJC PROJECT SUCCESSFUL?

A. Yes. After receiving Commission approval on November 21, 2019, CenterPoint Houston immediately began engineering design and right-of-way acquisition activities. The estimated budget for the BJC project, along the approved route, primarily using lattice steel towers, was $483 million. This estimate did not include approximately $14 million in allowance for funds used during construction ("AFUDC") expense. The final project cost was $522 million including construction overhead and AFUDC. The target completion date for the BJC was June 2022. CenterPoint Houston energized the BJC project on November 13, 2021, placing it in service ahead of schedule.

IV. HIGH VOLTAGE DIVISION PROGRAMS AND INITIATIVES

Q. PLEASE DESCRIBE THE TYPES OF PROGRAMS AND INITIATIVES WITHIN THE ELECTRIC ENGINEERING DIVISION.

A. CenterPoint Houston has implemented a number of programs and initiatives that were ongoing during the Test Year. The High Voltage Division has a role in the

Transmission Inspection and Rehab Program, the Transmission Tower Painting Program and the Contamination Mitigation Program. These programs are important to extend the useful lives of assets and supports the reliable operation of CenterPoint Houston's system.

A. TRANSMISSION INSPECTION AND REHAB PROGRAM

Q. WHAT IS THE TRANSMISSION INSPECTION AND REHAB PROGRAM?

A. The Transmission Inspection and Rehab Program is comprehensive five-year cycle transmission line inspection and rehabilitation program that is managed by the Transmission Operations department. The program is coordinated with the Vegetation Management program which is a distribution programs addressed by Company witness Randal Pryor to ensure that the integrity of existing transmission structures, wires, and rights-of-way are maintained. In implementing this program, Transmission Operations follows a reliability centered condition-based maintenance strategy for its transmission assets. However, the Transmission Operations maintenance intervals for diagnostics and testing transmission lines remains time-based.

Q. PLEASE EXPLAIN WHY THE INSPECTION AND REHAB PROGRAM IS IMPORTANT.

A. By following a condition-based strategy as part of the Transmission Inspection and Rehab Program, CenterPoint Houston is able to extend the useful life of our assets, optimize reactive maintenance costs, and prevent in-service failures. The benefits of the program are evident from the improvement in the transmission network's performance during various hurricanes and tropical storms that have impacted CEHE's service area over the years.

B. TRANSMISSION TOWER PAINTING PROGRAM

Q. WHAT IS THE TRANSMISSION TOWER PAINTING PROGRAM?

A. The transmission tower painting program consists of targeted painting of galvanized structures before failure of the galvanizing has occurred. As part of the line inspection and rehabilitation program, Transmission Operations inspectors rate the level of oxidation on a structure and identify those towers that need to be painted.

Q. PLEASE EXPLAIN WHY THE TRANSMISSION TOWER PAINTING PROGRAM IS IMPORTANT.

A. The Tower Painting Program is important because painting extends the life of the metallic structure by "replenishing" the galvanizing and providing a zinc based protective barrier from the atmosphere. Galvanizing protects the steel in two different ways, first by providing a zinc-based barrier from the environment and second by acting to cathodically protect the steel. Zinc is anodic to steel and therefore, when a corrosive atmosphere or electrolyte is present, the zinc corrodes instead of the steel tower, and therefore protects the tower from further corrosion.

C. CONTAMINATION MITIGATION PROGRAM

Q. WHAT IS THE CONTAMINATION MITIGATION PROGRAM?

A. Substation and Transmission Operations departments currently utilize a multi-step process to help identify and mitigate potential insulator contamination issues. The lack of rainfall causes contaminants to build up on insulators, which leads to insulator electrical arcing. Three mitigation methods utilized include:

1. Leakage Current Monitors measure leakage currents across insulators and wirelessly report data via radio frequency to a base unit. When threshold parameters are reached, insulator washing efforts are initiated to mitigate probability of flashovers.

2. Corona Camera is a handheld measurement device which detects and pinpoints insulator partial discharge and arcing activity. Insulator washing is initiated when excessive electrical activity is detected.

3. The Cumulative Wind Vector dashboard utilizes historical wind direction and rain patterns which calculate a proactive insulator-washing threshold score.

Q. PLEASE EXPLAIN WHY THE CONTAMINATION MITIGATION PROGRAM IS IMPORTANT.

A. Mitigating insulator contamination prevents equipment damage, serious failures and unplanned system and customer outages, which supports the reliable operation of CenterPoint Houston's transmission operations.

V. HIGH VOLTAGE AND SYSTEM OPERATIONS PLANNING AND COST CONTROL

Q. HOW ARE HIGH VOLTAGE AND SYSTEM OPERATIONS CAPITAL EXPENDITURES ESTABLISHED, MONITORED, AND CONTROLLED?

A. The Electric Business Unit has several cost control processes in place. These processes include: (1) the workforce planning process, (2) budgeting and cost control, (3) use of contractors, (4) the distribution planning process, (5) the transmission planning process, and 6) the asset management process. Mr. Tumlinson's testimony discusses the workforce planning process along with

budgeting and cost controls for internal crews, while Mr. Pryor's testimony will present budgeting and cost control and the use of contractors. The distribution planning process, the transmission planning process, and the asset management process are discussed in Mr. Easton's testimony. Additionally, Mr. Storey's testimony describes the Company's planning and budget processes for services provided to the Company by its affiliates. Together, these processes ensure that costs are consistent with CenterPoint Houston's policies and good utility practice. Capital projects within High Voltage and System Operations range in size from a few thousand dollars to several hundred million dollars, so High Voltage and System Operations uses a range of project controls to monitor the spending based on the size and estimated cost of the project. Regardless of the size of project, a project engineer is assigned to each High Voltage and System Operations capital project and the project's status and cost are reviewed on an ongoing basis during monthly schedule and budget meetings. Larger capital projects require a higher level of coordination and therefore need a full-time project manager and more thorough project controls.

Q. CAN YOU PROVIDE ANY EXAMPLES OF HOW THE COMPANY'S PROCESS HAS RESULTED IN THE SUCCESSFUL EXECUTION OF NEEDED PROJECTS AT REASONABLE COSTS?

A. The BJC Project is an example of a significant High Voltage and System Operations capital project that benefited from the use of additional project controls. BJC had a dedicated project manager, an executive oversight committee comprised of both corporate and business unit leaders, and a dedicated master project scheduler. The

project manager and master project scheduler developed a baseline schedule, held weekly project status reviews and monthly financial reviews, identified actual or potential risks to the schedule and budget, and created risk mitigation plans to help keep the project on track.

This governance structure provided the communication channels and approval delegation necessary to keep the project moving through many challenges that would have otherwise had a negative impact on the schedule and cost of the project. The COVID pandemic occurred during the ROW acquisition phase of the project which made communication with landowners more difficult, and courts started handling land matters virtually which also slowed the process. The Survey and Right of Way team was able to apply lessons learned from the Brazos Valley Connection Project completed in 2018 and use best practices to navigate the additional challenges and get the ROW acquisitions completed on schedule.

CenterPoint Houston placed orders for the lattice steel towers in May 2020 with two different fabricators. Both fabricators were located in Canada and had varying degrees of lockdown restrictions which impacted their ability to get enough labor on site. These labor challenges, combined with the difficulty of getting steel, caused several material delays. CenterPoint Houston worked closely with the manufacturers to prioritize the fabrication work and adjust the construction sequence; we also placed a third-party QA/QC inspector on site to help verify quality and reduce the amount of material that needed to be refabricated or field modified.

In addition to adjusting the construction sequence to accommodate material delays, CenterPoint Houston also had to adjust for a variety of weather and environmental impacts. In April 2020, a judge in Montana ruled to vacate the United States Army Corps of Engineers ("USACE") Nationwide Permit 12. The permit was reinstated for utilities in May 2020 but the ongoing appeal process introduced some additional risks if the environmentally sensitive areas of the BJC project were not completed prior to July 2021. The Company was able to quickly adjust the construction sequence to complete construction of all river crossings and structures in environmentally sensitive areas before July 2021. Major weather events during the construction of BJC including Winter Storm Uri in February 2021, a major flooding event in May 2021, and Hurricane Nicholas in September 2021, all impacted construction in varying degrees, but the group was able to recover by reacting quickly and making necessary adjustments. Despite all of these challenges—a global pandemic, labor and material shortages, adverse legal developments, an unprecedented winter storm, major flooding, and a hurricane—CenterPoint Houston was able, through its planning and cost control measures, to limit cost overruns on BJC to less than 10%.

Q. HOW DOES CENTERPOINT HOUSTON ENSURE THAT ITS TRANSMISSION AND SUBSTATION OPERATION AND MAINTENANCE EXPENSES ARE REASONABLE AND PRUDENT?

A. CenterPoint Houston has well-established, reasonable O&M practices for its transmission and substation facilities. For instance, CenterPoint Houston employs a five-year physical inspection cycle for its transmission facilities, and a one-year

aerial inspection cycle. CenterPoint Houston follows NERC standard PRC-005-6 for Bulk Electric System protection equipment testing and maintenance, which specifies types of equipment requiring testing and the designated testing intervals. Work orders for equipment designated in PRC-005-6 are automatically generated and available to Substation Operations in advance to allow enough time to complete the work well before deadlines. All High Voltage and System Operations maintenance plans are made up of maintenance strategies, which set frequencies, and task lists that set the job scope and hourly standards. The Company compares maintenance practices with other utilities at peer conferences and working groups. The Company also uses maintenance interval recommendations from equipment manufacturers and our own failure analysis data to establish best practices and metrics for maintenance. All High Voltage and System Operations departments perform budget analysis monthly to monitor O&M spend. Substation Operations has modified maintenance intervals of substation checks to align with ERCOT summer and winter weatherization guidelines. Prior to the month of June, a check of all CenterPoint Houston owned substations will occur to ensure functionality and or documentation of any outstanding issues of all critical equipment outlined by ERCOT summer weatherization guidelines. Subsequently, Substation Operations must then perform a station check each month from June to September to maintain compliance in the summer season. Prior to the month of December, a check of all CenterPoint Houston owned substations and a DGA sample of all power and auto transformers will occur to ensure functionality and or documentation of any

outstanding issues of all critical equipment outlined by ERCOT winter weatherization guidelines.

A. WORKFORCE PLANNING PROCESS

Q. HOW DOES CENTERPOINT HOUSTON ENSURE THAT IT MAINTAINS PERSONNEL LEVELS SUFFICIENT TO OPERATE AND MAINTAIN ITS TRANSMISSION AND SUBSTATION SYSTEMS?

A. CenterPoint Houston must have an adequate number of experienced and well-trained field operations employees on staff at all times. This will enable the Company to support maintenance, operations, and construction for service area growth and facilitate timely response for restoration efforts. As such, the Company has processes in place to ensure adequate staffing while, at the same time, ensuring that its staffing is efficient and reasonable. Mr. Pryor addresses the details of the workforce planning process in his direct testimony.

For instance, the Company regularly and consistently evaluates future staffing needs. Succession planning is reviewed and updated for key positions within the high voltage and system operations organization to address attrition, retirements, and promotions. Within the High Voltage and System Operations division, the Substation Operations department, in coordination with the RTO department, currently uses ITOA, an outage scheduling tool, to ensure we have the proper resources available in all service areas to execute our outage schedule and restoration. Crews can be redistributed across service center boundaries to meet varying daily work assignments.

In addition, Substation Operations reviews labor hour and staffing resources at the service center level by surveying all prescribed substation asset maintenance per service area and comparing it against the available work force. Crews are then allocated to service areas based on the maintenance requirements for each area.

Q. ARE WORK MANAGEMENT SYSTEMS IN PLACE?

A. Yes. All of the departments referenced in my testimony have work management systems in place to analyze the need for resources and to schedule and monitor work. Since 2000, these systems have been integrated with the corporate enterprise information system, SAP. This effort has enhanced overall efficiency, enabled resource allocation, and provided improved cost monitoring.

B. USE OF CONTRACTORS

Q. DOES THE COMPANY USE CONTRACTORS IN ADDITION TO ITS INTERNAL WORKFORCE?

A. Yes. The Company uses contractors to supplement its work force to handle variations in the workload due to changes in economic, weather, or other conditions. The Company uses contractors for tasks such as new substation and transmission construction, tree trimming, engineering for new transmission lines and processing residential distribution generation (distributed energy resources) applications. Line contractors also aid in the Company's service restoration response after severe weather.

Q. WHAT DEPARTMENTS WITHIN THE HIGH VOLTAGE AND SYSTEM OPERATIONS DIVISION USE CONTRACTORS IN ADDITION TO THE COMPANY'S INTERNAL WORKFORCE?

A. Three of the High Voltage and System Operations departments rely on additional contractors as described below.

- Transmission Operations uses contractors for capital construction and the maintenance work on transmission lines; offshore support of projects and maintenance of structures in and along the waters of the Gulf Coast; the installation of gates, gaps, culverts, roads, and pads; the maintenance painting of steel structures; and helicopter contractors for project support.

- Substation Operations uses contractors to construct and install substation electrical equipment and structures, as well as replace damaged substation equipment.

- DOC uses contractors to process, review, and commission residential and commercial customers' distributed energy resource requests to interconnect and operate in parallel to CenterPoint Houston.

VI. HIGH VOLTAGE AND SYSTEM OPERATIONS O&M EXPENDITURES

Q. WHAT ARE THE O&M EXPENDITURES ATTRIBUTABLE TO THE HIGH VOLTAGE AND SYSTEM OPERATIONS ORGANIZATION FOR THE TEST YEAR?

A. Test year O&M expenditures for High Voltage and System Operations totaled approximately $65.2 million. Figure DM-4 shows the test-year expense for each department as well as administrative and general expenses.

Figure DM-4: Test-Year O&M Expense by Department for High Voltage and System Operations

High Voltage and System Operations O&M by Department	Total Test Year Expense (millions)
Distribution Operations and Control	$4.837
Substation Operations	$32.062
Transmission Operations	$21.610
Real Time Operations	$6.033
Administration & General	$0.649
Total	$65.192

Q. WHAT ACTIVITIES ARE INCLUDED IN THE TEST YEAR AS O&M EXPENSES?

A. O&M expenditures are related to the High Voltage and System Operations day to day non-capital activities. These activities involve the work performed by each of the different departments that ensure the ongoing operations of the CenterPoint Houston System.

Q. PLEASE DESCRIBE THE ASSOCIATED O&M COST WITH DISTRIBUTION OPERATIONS AND CONTROL.

A. For the test year, DOC O&M-related costs were $4.8M. The O&M expenses for DOC are essential non-capital expenses that involved the types of activities I described previously discussed, including union straight labor and overtime

associated with 24/7 monitoring of all distribution assets in near real time systems, providing proactive and reactive switching orders, clearances, and outages for both internal and external distribution line crews. Additionally, this department consists of outage support responsible for testing, training, and rollout assistance with the ADMS and Service Suite.

Q. PLEASE DESCRIBE THE ASSOCIATED O&M COST WITH SUBSTATION OPERATIONS.

A. For the test year, Substation Operations O&M-related costs were $32.1M. These O&M costs are the essential, non-capital work expenses required to sustain Substation Operations' maintenance and repair obligations, facilities, operational support elements, staffing, and services. Substation Operations is responsible for performing preventative maintenance on an extensive portion of physical assets and facilities within the Company's substation perimeters, in addition to select assets at customer-owned locations. Ever-increasing regulatory requirements and reliability targets play a large part in the types of preventative maintenance and the frequency at which it is performed by field operations. Additionally, corrective and unplanned activities are required to address issues and outages resulting from fault events or equipment failures, extraordinary weather, or special, regional events. Substation facilities also require regular checks and maintenance of physical security elements, switch yard pads, retention barriers, and remote monitoring systems. Substation Operations' O&M costs also include the management, administrative and auxiliary staff which support field operations personnel and activities, compliance, and department logistics. Equipment, tools, fuel, and other materials used in daily field

operations are also the obligation of Substation Operations. Expenses also include payments to service vendors that support through equipment rental, software and hardware systems licensing and support, testing, and other repair services such as plumbing or roofing.

Q. PLEASE DESCRIBE THE ASSOCIATED O&M COST WITH TRANSMISSION OPERATIONS.

A. For the test year, Transmission Operations O&M-related costs were $21.6M. This department is responsible for the day-to-day operations of the transmission delivery system including construction, maintenance, and restoration.

The majority of the O&M expenditures are for essential, non-discretionary activities since they involve transmission maintenance and transmission restoration. Transmission maintenance includes repairs for obstruction lighting, structure appurtenances, wildlife mitigation, wildfire mitigation, structure painting, and field corrective maintenance, which is follow-up maintenance after trouble. Other required O&M expenses are for meetings, training, patrol inspection, and grounding for others.

Outage events are typically caused by inclement weather, equipment failure, and foreign objects (trees, vehicles, wildlife, etc.) coming into contact with transmission facilities. Most of the O&M repairs that are required are minor in nature, such as replacing non-capital equipment (such as bent steel, lighting repair, broken guy wire, damaged structure barriers, damaged bird spikes, etc.). These expenditures do not include costs for restoration during major storm events, such as a hurricane or significant ice storm.

Q. PLEASE DESCRIBE THE ASSOCIATED O&M COST WITH REAL TIME OPERATIONS.

A. For the test year, Real Time Operations O&M-related costs were $6.0M. RTO monitors CenterPoint Houston's transmission network and performs control actions to ensure reliable operations in compliance with ERCOT Operating Guides and NERC reliability standards. RTO maintains and operates the company's Local Control Center.

The vast majority of O&M expenditures is due to straight labor and overtime associated with 24/7 real time monitoring of the Company's Transmission system, providing switching orders and clearances for transmission outages, and control actions as directed by ERCOT or necessary to maintain reliable operations. Additionally, this department consists of support groups responsible for outage coordination, engineering support, and operator training necessary to meet NERC compliance.

Q. PLEASE DESCRIBE THE ASSOCIATED O&M COST WITH THE ADMINISTRATIVE AND GENERAL CATEGORY.

A. For the test year, Administrative and General O&M-related costs were $0.6M. These expenses include managerial labor, research and development, fleet related costs, utilities and miscellaneous general expenses for High Voltage and System Operations.

Q. ARE THE HISTORICAL TEST YEAR O&M EXPENSE OF THE HIGH VOLTAGE AND SYSTEM OPERATIONS ORGANIZATION DISCUSSED IN THIS PROCEEDING REASONABLE AND NECESSARY?

A. Yes. The test year O&M expense for High Voltage and System Operations were related to necessary functions that directly impacted the reliability and operation of the transmission system to serve both existing and new customers.

Q. DID THE COMPANY INCUR INCREMENTAL EXPENSES RESULTING FROM THE EFFECTS OF THE COVID-19 PANDEMIC?

A. Yes. In order to meet the electric delivery needs of our customers, CenterPoint Houston implemented precautionary measures in response to the COVID-19 pandemic to keep its customers, contractors, and employees safe and informed. The Company incurred goods and services procured as part of that response that would not have been incurred in the normal course of business. Those incremental costs largely include personal protective equipment, facilities and personal cleaning products, additional janitorial services, government-required testing, additional staging sites for social distancing and continued operations, and employee expenses for supplies and mileage necessary for closures and remote work.

Q. FOR THE COVID INCREMENTAL DIRECT COSTS, HOW DID THE COMPANY DETERMINE THE AMOUNTS TO DEFER?

A. At the start of the pandemic, the Company created cost objects in its accounting system to track COVID-related incremental direct costs incurred specifically as a result of and in response to the pandemic. Separate internal orders were established for each business area, and employees were instructed to charge COVID incremental direct costs to these orders. Company witness Ms. Kristie Colvin provides direct testimony for the accounting treatment of these incremental COVID expenses.

VII. HIGH VOLTAGE AND SYSTEM OPERATIONS CAPITAL ADDITIONS

Q. PLEASE DESCRIBE THE HIGH VOLTAGE AND SYSTEM OPERATIONS CAPITAL INVESTMENT FOR WHICH THE COMPANY SEEKS A PRUDENCE DETERMINATION IN THIS CASE.

A. CenterPoint Houston must continually invest in its transmission and substation infrastructure to ensure the safe and reliable provision of electric service. To this end, between January 1, 2019 and December 31, 2023, CenterPoint Houston's high voltage capital investments total approximately $3.6 billion. My testimony discusses the reasonableness and necessity of these capital investments in six broad categories: (1) load growth, (2) transmission system improvements, (3) clean energy enablement/generation interconnections, (4) operations support and other, (5) storm response and restoration, and (6) public improvements. These categories support the four investment pillars that are described in the direct testimony of Company witness Lynnae Wilson. These costs are identified in Figure DM-5, Capital Investment by Category.

Figure DM-5: Capital Investment by Category for High Voltage and System Operations

High Voltage and System Operations Capital Investment by Category	Investment in millions
Load Growth	$2,643.9
Transmission System Improvements	$696.5
Clean Energy Enablement/Generation Interconnections	$220.6
Operations Support and Other	$45.1
Storm Response and Service Restoration	$35.3

Public Improvements	$6.9
Total	$3,648.3

Q. IS THE CAPITAL INVESTMENT BOOKED TO PLANT AS ADJUSTED THROUGH DECEMBER 31, 2023 USED AND USEFUL IN PROVIDING UTILITY SERVICE?

A. Yes. All of the capital investment CenterPoint Houston booked to plant from January 1, 2019 through December 31, 2023 is used and useful in providing utility service.

Q. IS THE COMPANY'S TRANSMISSION CAPITAL INVESTMENT PRUDENTLY INCURRED AND REASONABLE AND NECESSARY?

A. Yes. The Company's transmission capital investment was prudently incurred and was necessary to ensure a reliable transmission system that complies with applicable NERC and Commission standards and enable increased transfers across constrained transmission interfaces identified by ERCOT. I explain the details of that investment related to each category further below.

1. <u>LOAD GROWTH</u>

Q. HAS THE COMPANY EXPERIENCED SIGNIFICANT LOAD GROWTH SINCE JANUARY 1, 2019?

A. Yes. As I explained in Section II. Of this testimony, and as further explained by Company witness Lynnae Wilson, CenterPoint Houston has seen significant load growth since 2019.

Q. WHAT LOAD GROWTH PROJECTS HAVE BEEN NECESSARY SINCE THE COMPANY'S LAST RATE PROCEEDING?

A. Since the Company's last rate proceeding, CenterPoint Houston has invested approximately $2,643.9 million in load-growth projects including new substations, new transmission lines, new power transformers and autotransformers, and upgrades to existing transmission and substation facilities. The need for new substations and new transmission lines, as well as other transmission system upgrades, is identified through the transmission planning process as addressed in the direct testimony of Company witness Eric Easton.

Q. PLEASE DISCUSS INVESTMENT IN CENTERPOINT HOUSTON'S SUBSTATIONS FROM 2019 THROUGH 2023.

A. Since the Company's last rate proceeding in Docket No. 49421, CenterPoint Houston has built six new distribution substations and two new transmission substations to keep up with load growth inside its footprint. This number does not include the fifteen interconnecting switchyards that were built to interconnect new generation facilities. Aside from building new substations, CenterPoint Houston has also addressed load growth by modifying existing substations and substation equipment to enhance our ability to serve increased load. These modifications include adding autotransformers at existing substations and upgrading existing autotransformers or other limiting equipment.

Q. DOES CENTERPOINT HOUSTON EXPECT TRANSMISSION LOAD GROWTH TO CONTINUE?

A. Yes. The Company energized ten new transmission connected customer substations between 2019 and December 2023 and will experience load expansion for at least four existing sites. Additionally, the Company plans to energize one

new customer substation between 2023 and 2025. These projects have an aggregate demand of approximately 950 MW. Transmission Planning is also currently studying 29 new customer load projects, with an aggregate demand of approximately 9,899 MW, which is nearly twice the size of the entire non-coincident peak transmission customer demand in Summer 2023.

Q. ARE INCREASING LEVELS OF CAPITAL INVESTMENT REQUIRED TO SUPPORT AND SERVE THE COMPANY'S LOAD GROWTH?

A. Yes. The Company will continue to invest in necessary infrastructure to safely and reliably serve all customers in its footprint.

2. TRANSMISSION SYSTEM IMPROVEMENTS

Q. WHAT TYPES OF TRANSMISSION PROJECTS ARE INCLUDED IN THE CATEGORY OF SYSTEM IMPROVEMENTS?

A. CenterPoint Houston's transmission system has been delivering energy to customers for over 100 years, and the Company has facilities and equipment that have been installed throughout that time. Projects involving replacement of facilities or equipment typically occur when the facilities or equipment become obsolete or deteriorated, and therefore pose reliability or safety concerns. Replacement decisions are typically made based on an assessment of the condition of the facilities conducted either through monitoring and inspection programs or in response to outages.

Q. PLEASE DESCRIBE SOME OF THE TYPICAL ACTIVITIES INCLUDED IN THIS CATEGORY.

A. Transmission preventive maintenance projects involve replacement or modification of equipment that is identified through the five-year inspection and maintenance

cycle or through reliability reporting and analysis for all transmission circuits. Substation corrective projects, such as the circuit breaker replacement program, involve replacement or modification of equipment identified through condition-based inspection or analysis of substation equipment. The Company has made several capital improvements to their substation facilities since 2019. For example, the Company has retrofitted several substations with an elevated substation design, based on coastal location, flood plain maps and our experience with Hurricanes Ike and Harvey, to account for storm surge and other types of flooding. New coastal substations are constructed such that flood-sensitive equipment is above the potential storm surge for a CAT 5 storm based on the NOAA storm surge inundation map while inland substations are designed with an elevation that considers flood plain maps. Additionally, the Company has invested in heightened physical security at all substations to reduce the risk of unauthorized access. Control center modifications or replacement projects are based upon external requirements (typically ERCOT or NERC requirements) and upon ongoing assessments of system functionality. An adequate inventory of spares for major equipment, such as transformers and breakers, is also kept in the event that long lead-time, major equipment fails or is damaged. Typically, this type of equipment requires lead times in excess of eighteen months to acquire and it is prudent to maintain a certain number of spares in reserve to replace failed equipment. Once placed into service, spare equipment is replaced as soon as practical to maintain an adequate inventory.

CenterPoint Houston's facilities must also be modified or relocated upon request. Often these requests are from governmental agencies and are related to

road widening; water, road or rail crossing regulations; or other improvement or expansion projects. Responsibility for the costs of relocating transmission facilities typically is placed upon the requesting party unless the land rights of the requesting party indicate otherwise.

CenterPoint Houston remains committed to the retirement and upgrade of its 69 kV transmission network. Elimination of aging infrastructure, upgrading to higher capacity 138 kV facilities, gained efficiency around inventory management and improved resiliency are all attributable to this effort.

3. CLEAN ENERGY ENABLEMENT/GENERATION INTERCONNECTIONS

Q. WHAT CLEAN ENERGY ENABLEMENT/GENERATION INTERCONNECTION INVESTMENT IS INCLUDED IN THIS PROCEEDING?

A. In this proceeding, Clean Energy Enablement/Generation Interconnection generally refers to projects constructed to directly interconnect new generators to the transmission system. Under Commission rules, transmission and substation costs necessary to interconnect new generating units are generally not collected from generators but are recovered through rates. CenterPoint Houston witnesses Lynnae Wilson and Eric Easton discuss the reasons for focusing on clean energy enablement in light of the increase in interconnection requests from intermittent renewable resources and the need to account for some of the issues with integrating these resources.

Q. HOW MANY INTERCONNECTIONS TO NEW GENERATION FACILITIES HAVE OCCURRED ON CENTERPOINT HOUSTON'S TRANSMISSION SYSTEM SINCE 2019?

A. Since 2019, CenterPoint Houston completed the transmission interconnection facilities to interconnect twenty-five new generating plants: Peyton Creek Wind, Wagyu Solar, PES1, Roughneck Storage, Ramsey Solar, Old 300 Solar Center, BRAES, Brazoria West Solar, Fighting Jays Solar, S Branch Solar, Cutlass Solar, Chamon 2, Brazoria County Solar, Fort Bend Solar, Longbow Solar, Mark One Power Station, Red-Tailed Hawk Solar, Colorado Bend I Expansion, Wharton County Generation, Myrtle Solar, Myrtle Storage, Brotman Power Station, GulfStar Solar, Danish Fields Solar and Danish Fields Storage. These new generating plants collectively represent approximately 6,435 MW of planned capacity.

Q. PLEASE DESCRIBE THESE GENERATION INTERCONNECTIONS.

A. Out of these twenty-five generation interconnections, ten occurred at existing switchyards. The other fifteen generation interconnections required the Company to construct new 138 kV or 345 kV switchyards. The estimated costs of the transmission interconnection facilities required for these plant interconnections were financially secured by the generator and have been or will be released upon declaration of commercial operations in accordance with the terms of each standard generation interconnection agreement.

Q. WHAT ARE THE DIFFERENT TYPES OF GENERATION THAT CENTERPOINT HOUSTON HAS INTERCONNECTED SINCE 2019?

A. The following figure shows the different generation by fuel type and the total MW of interconnected generation for that category.

Figure DM-6: Generation Interconnections by Fuel Type between 2019 and 2023

Generation Type	Total MW
Thermal	1,750 MW
Solar	4,185 MW
Battery	350 MW
Wind	150 MW

Q. WHAT ARE SOME OF THE FACTORS THAT AFFECT GENERATOR INTERCONNECTION COSTS?

A. The main driver of generation plant interconnection cost is proximity of the generating unit to electrical facilities of adequate size to accommodate the interconnection. If a generation plant is built close to an existing, expandable substation, CenterPoint Houston can extend a generator lead to the plant with minimal construction costs. If the plant requires a new interconnecting switchyard, the cost will be higher. Proximity to the Company's existing transmission facilities also drives cost based on the length of any necessary service extension. CenterPoint Houston's Transmission Planning department studies each generation interconnection in coordination with and under supervision of ERCOT to determine possible interconnection options and the impact of those interconnections to the transmission system. When multiple interconnection options exist, the Company

selects the most reasonable and cost-effective interconnection option, considering direct connection costs and reasonably anticipated upgrades.

4. OPERATIONS SUPPORT AND OTHER

Q. PLEASE GENERALLY DESCRIBE THE TYPES OF CAPITAL EXPENDITURES INCLUDED IN THE CATEGORY OF OPERATIONS SUPPORT.

A. The capital expenditures included in operations support include expenditures related to work locations, vehicles, and electrical equipment necessary to perform work on transmission and substation facilities. Expenditure related to work locations include modifications to offices and purchases of office equipment such as computers, printers, and copiers. Expenditures related to vehicles include service trucks, inspection vehicles, bucket trucks, trailers, and other construction equipment. Expenditures related to electrical equipment include equipment necessary to test and commission transmission and substation facilities such as Doble diagnostic testing equipment, relay test equipment, and meters.

5. STORM RESPONSE AND SERVICE RESTORATION

Q. PLEASE GENERALLY DESCRIBE THE RESTORATION EFFORTS INCLUDED IN THIS CATEGORY.

A. The High Voltage and System Operations division capital expenditures included in Restoration investment are the costs to restore transmission or substation facilities after a significant weather event or other catastrophic event occurs. After these types of events occur, CenterPoint Houston moves quickly to restore service using emergency preparedness plans. Transmission Operations has an emergency operating material plan negotiated with vendor alliances to ensure that replacement

structures, wire, hardware, and insulators are available on-hand before hurricane season and that replenishment of material is expedited should additional material be needed for restoration. This spare material is also used throughout the year, outside of hurricane season, for restoration after tornadoes, fires, or other events that cause physical damage to the Company's transmission or substation facilities. Substation Operations liaises with both internal and external customers to deploy Temporary Emergency Electric Energy Facilities or mobile generation to aid in restoring service following storm events. In addition to mobile generator site location pre-planning and electrical connectivity, Substation Operations provides logistical support in areas such as generator fuel delivery coordination, employee after-hours staffing scheduling, the execution of electrical switching operations and will also provide site administration with respect to compliance-driven substation access requirements. These, as well as additional peripheral functions, will remain in effect throughout the entire emergency event.

Q. DID CENTERPOINT HOUSTON EXPERIENCE SIGNIFICANT WEATHER EVENTS DURING THE PERIOD SINCE ITS LAST BASE RATE CASE?

A. Yes. CenterPoint Houston's service territory experienced several significant weather events that required the Company to mobilize and undertake restoration efforts. I describe these weather events from a transmission system perspective and the associated work the Company performed to ensure that its customers' power is restored as soon as possible. The following is a description of the five most significant weather events in the Company's service territory since 2019. The

Company incurred reasonable and necessary costs associated with preparing for the storms and restoring facilities after the storms' impacts. Company witness Deryl Tumlinson also speaks to storm restoration as it relates to the Company's distribution system.

a) HURRICANE LAURA

Q. DID HURRICANE LAURA AFFECT CENTERPOINT HOUSTON AND WHAT WAS THE RESPONSE?

A. Hurricane Laura made landfall on August 27, 2020, as a Category 4 hurricane with winds at 150 miles per hour. While the direct path was through Louisiana, CenterPoint Houston felt the impact. Approximately 8,257 customers lost power from the heavy downpours, gusty winds, and lightning. As referred to within Deryl Tumlinson's testimony, CenterPoint Houston offered mutual assistance to Louisiana and sent 124 internal full-time employees with appropriate fleet and equipment to support the restoration. CenterPoint Houston also released 87 full-time contractor line skills for additional support for those impacted. Substation Operations provided support to Entergy Texas' restoration efforts by standing by at the normally open Crosby to Dayton Tie in the event Block Load Transfer services were needed to support Entergy Texas's service territory. There was no damage to the Company's transmission system; however precautionary measures were taken. Substation Operations performed pre-landfall inspections to verify equipment operating condition, closed flood gates at applicable locations, organize field crews to standby during landfall and make preparations to place the block load transfer Dayton tie into service, if needed. Transmission Operations secured 200 contractors and 100 mutual assistance personnel in anticipation of landfall for the

category 3 hurricane. While the hurricane did not ultimately impact CenterPoint Houston's transmission system, it was reasonable for the Company to prepare to address any potential impacts given the weather reports at the time. It is not always clear where hurricanes will make landfall, but projections at the time indicated that the Houston area would be impacted. In light of that information, it was prudent for CenterPoint Houston to be prepared to act if the storm caused damage to its system and incur the related costs.

b) WINTER STORM URI

Q. HOW WAS CENTERPOINT HOUSTON IMPACTED BY WINTER STORM URI AND WHAT WAS THE RESPONSE?

A. In February 2021, Winter Storm Uri occurred when several powerful polar vortex cold fronts brought extreme record-breaking winter weather with strong winds, snow, ice, and bitterly cold temperatures to most of the state, including the Company's service area. The severe winter weather forced many Texas power plants offline while load was increasing to record levels, which resulted in an ERCOT system generation shortfall. This forced ERCOT to begin requests for the Company to manually shed very significant amounts of load for about three days. This load shed event created over 5.2 billion customer interruption minutes and a system wide SAIDI of 2,019.57 minutes. During the restoration, CenterPoint Houston experienced a significant number of failed distribution service transformers that were addressed by the Distribution Operations Division.

c) HURRICANE NICHOLAS

Q. DID HURRICANE NICHOLAS AFFECT CENTERPOINT HOUSTON AND WHAT WAS THE RESPONSE?

A. Hurricane Nicholas made landfall on Sept 13, 2021, as a Category 1 Hurricane with winds at 75 miles per hour. Nicholas caused outages of over 500 million customer minutes and a system wide SAIDI of 188.47 minutes. As referred to within Deryl Tumlinson's testimony, CenterPoint Houston activated its Emergency Operations Plan ("EOP") and brought in 2,089 mutual assistance skills, with 381 tree resources and 1,708 distribution resources. After an initial assessment, Substation Operations efforts quickly focused on salt contamination on substation equipment as a result of high coastal winds requiring equipment washing and repair efforts in the Freeport area. Major damage occurred within the STP transmission common corridor. In accordance with the terms of a STP Transmission Lines Maintenance Agreement, AEP Texas has primary responsibility to maintain and repair the circuits and towers that reside within the common corridor. AEP assumed responsibility of the repairs that occurred as part of this storm event. Additionally, CenterPoint Houston's Transmission Operations department washed approximately 0.5 mile of transmission circuits, as well as line insulators as a precautionary measure due to observed corona activity as a result of the increased salt induced contamination from the coastal hurricane winds.

d) JANUARY 2023 TORNADO

Q. DID THE JANUARY 2023 TORNADO AFFECT CENTERPOINT HOUSTON?

A. In January 2023, the National Weather Service issued a Tornado Emergency as a powerful EF3 tornado with a maximum wind speed of 140 mph touched down and left a path of destruction for about 18 miles, stretching from Pasadena to Deer Park to La Porte to Baytown resulting in eight transmission structures being destroyed in the event. These structures were crumpled, bent over and lying on the ground. Our dedicated transmission operations crews mobilized with support from various corporate functions and coordinated efforts with first responders, customers, railroads, underground pipelines, etc. to safely restore the transmission system in a safe and reliable manner. Two structures were bypassed with temporary dead-end poles and additional temporary poles were set to holdup the temporary jumpers. A longer stretch of six structures was restored by setting temporary dead-end poles and pulling temporary wire on the vacant side of a nearby tower line. Some permanent replacement structures have been installed after design and purchase of the replacement structures, and the Company expects to finish this work by end of year 2024. Substation Operations incurred minor damage at Fairmont Substation. The Substation Operations department also provided support to the Transmission Operations department and their restorative efforts.

e) JUNE 2023 STORM

Q. HOW DID THE JUNE 2023 STORM AFFECT CENTERPOINT HOUSTON?

A. The June storm (referred to as a micro-burst) involved high winds but had minimal effects on Substation equipment. Efforts were focused on supporting transmission line restoration to restore power to the de-energized Kuykendahl substation. Transmission Operations found a severely damaged structure due to a tree from

outside the Company's right-of-way falling on the structure. The bottom arm of the tower was destroyed due to additional weight caused by the fallen tree. The damaged infrastructure was temporarily bypassed and service was restored while permanent repairs were made.

6. PUBLIC IMPROVEMENTS

Q. CAN YOU EXPLAIN THE NEED FOR INVESTMENT RELATED TO PUBLIC IMPROVEMENT PROJECTS?

A. Growth and changes in population often result in public improvement projects such as road expansions, new roadways, right-of-way changes and changes in land use, which, in turn, require relocations and other changes to the existing transmission infrastructure. In total, High Voltage and System Operations spent $6.9 million to relocate the Company's electric transmission facilities to accommodate major road, highway, and freeway construction during the period from January 1, 2019, to December 31, 2023.

Q. CAN YOU PROVIDE EXAMPLES OF PUBLIC IMPROVEMENT ACTIVITY NECESSARY TO ACCOMMODATE CUSTOMER GROWTH SINCE DOCKET NO. 49421?

A. Examples of facility relocations that have taken place since the Company's last base rate proceeding include: SH 249 in Grimes County, Old Needville-Fairchild Road in Needville, TX, Wallisville Road in Baytown, TX, East River Crossing near Houston, TX, I-45 in Tiki Island, TX, FM 1960 and SH 249 in Houston, TX, and Texas Heritage Parkway in Fulshear, TX.

VIII. CO-SPONSORED CAPITAL SCHEDULES

Q. WHICH RATE FILING PACKAGE SCHEDULES DO YOU CO-SPONSOR?

A. I co-sponsor two schedules that are part of the rate filing package. The schedules and my co-sponsors are listed in the chart below.

Figure DM-7: Co-Sponsored Schedules

Schedule	Co-Sponsor(s)
Schedule II-B-I-I Transmission Projects	Kristie Colvin
Schedule M Plant Additions	Mandie Shook and Eric Easton

A. TRANSMISSION PROJECTS

Q. PLEASE DESCRIBE THE PORTION OF SCHEDULE II-B-I-I TRANSMISSION PROJECTS THAT YOU SPONSOR?

A. I sponsor the transmission projects and the associated costs reflected on the Schedule. The transmission projects costs reflected on the schedule are reasonable and necessary for CenterPoint Houston to provide service to customers and those costs are prudently incurred. My testimony has discussed the different categories of projects that are captured on the Schedule in detail and the reasons they are needed for the continued reliable operation of the CenterPoint Houston system and to serve customers.

B. SCHEDULE M - PLANT ADDITIONS

Q. DO YOU SUPPORT ANY OF THE CAPITAL ADDITIONS REFLECTED ON SCHEDULE M OF THE RATE FILING PACKAGE?

A. Yes. Along with Ms. Shook and Mr. Easton, I sponsor portions of the "M" Schedules which relate to certain plant additions. Specifically, Ms. Shook and I

co-sponsor Schedules VI-M-1 and VI-M-3 (which includes VI-M-3.1 and VI-M-3.2); I support the actual costs shown on Schedule M and discuss the information contained in Schedule M below. Mr. Easton sponsors Schedule VI-M-2 (which includes VI-M-2.1 and VI-M-2.2).

Q. PLEASE EXPLAIN THE INFORMATION REFLECTED IN SCHEDULE M.

A. Schedule M was adopted by the Commission in 2020 and requires utilities to provide details about transmission projects with costs above $250,000. As required, the Company's Schedule M reflects information about the estimated costs, as reported on the first monthly construction progress report ("MCPR") in which the projects appeared (the "Initial MCPR Estimated Cost"), and the actual costs of projects. The schedule also identifies which projects have a greater than 10% variance between the Initial MCPR Estimated Costs of the project and the actual cost of the project.

Q. WHAT TYPES OF PROJECTS ARE REFLECTED IN SCHEDULE M?

A. Schedule M includes all transmission projects that involve at least $250,000 of capital investment and fall into one of four categories: transmission lines that required a CCN; transmission lines that were exempt from CCN approval; substations that have transmission level voltage facilities; and high voltage switching stations.

Q. HOW MANY PROJECTS ARE INCLUDED IN CENTERPOINT HOUSTON'S SCHEDULE M?

A. There are a total of 125 projects listed on CenterPoint Houston's Schedule M.

Q. HOW MANY PROJECTS INCLUDED IN CENTERPOINT HOUSTON'S SCHEDULE M HAVE A VARIANCE FROM THE INITIAL MCPR ESTIMATED COST OF MORE THAN 10%?

A. Of the 128 projects listed on Schedule M, 75 had actual costs that were more than 10% greater than CenterPoint Houston's Initial MCPR Estimated Cost. When compared to the updated estimated cost submitted in the last MCPR prior to 30 days before construction (the "Final MCPR Estimated Cost"), only 40 had actual costs that were more than 10% greater. Additionally, 35 projects that the Company reported on Schedule M had final costs there were at least 10% below the Initial MCPR Estimated Cost.

Q. DOES CENTERPOINT HOUSTON'S SCHEDULE M EXPLAIN THE REASONS FOR THOSE VARIANCES?

A. Yes. CenterPoint Houston has provided an explanation for each instance in which the actual cost of a project was more than 10% greater than the Initial Estimated Cost for the project.

Q. WHAT WERE SOME OF THE COMMON DRIVERS OF THE VARIANCES THAT EXCEEDED THE 10% VARIANCE?

A. Common causes of variances from the Initial MCPR Estimated Cost included:

- weather delays such as high winds, rain, and flooding, which extended schedules and drove up costs;
- unanticipated difficulty in obtaining rights-of-way from government entities or private landowners;
- unanticipated needs to work around government projects, such as newly constructed lakes, road widenings, or road relocations;

- pandemic delays, which required resubmitting applications for permits that expired during the delay;
- unanticipated ERCOT outage constraints;
- customer issues that delayed or prevented access to work areas; and
- supply chain issues that either caused delays or required using more expensive materials.

In addition to the above issues causing costs to increase, some of the variances reflect the requirement to use the Initial MCPR Estimated Costs, which was often based on less complete information than the estimated costs reflected in subsequent MCPRs.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

STATE OF Texas §
§
COUNTY OF Ellis §

AFFIDAVIT OF DAVID L. MERCADO

BEFORE ME, the undersigned authority, on this day personally appeared David L. Mercado who having been placed under oath by me did depose as follows:

1. "My name is David L. Mercado. I am of sound mind and capable of making this affidavit. The facts stated herein are true and correct based upon my personal knowledge.

2. I have prepared the foregoing Direct Testimony and the information contained in this document is true and correct to the best of my knowledge."

Further affiant sayeth not.

David L. Mercado

SUBSCRIBED AND SWORN TO BEFORE ME on this 16th day of February, 2024.

Notary Public in and for the State of Texas

My commission expires: Jan 26, 2027

BIANCA COSTER
NOTARY ID #13416793-4
My Commission Expires
January 26, 2027

THERE ARE NO EXHIBITS

TO

THE DIRECT TESTIMONY

OF

DAVID MERCADO

DAVID MERCADO WORKPAPERS

WP DM-1 D. Montana Order on NWP 12 April 15 2020

WP DM-2 NWP12-Order-5.11.2020

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA
GREAT FALLS DIVISION

NORTHERN PLAINS RESOURCE COUNCIL, et al.,
Plaintiffs,
v.
U.S. ARMY CORPS OF ENGINEERS, et al.,
Defendants,
TC ENERGY CORPORATION, et al.,
Intervenor-Defendants,
STATE OF MONTANA,
Intervenor-Defendant,
AMERICAN GAS ASSOCIATION, et al.,
Intervenor-Defendants.

CV-19-44-GF-BMM

ORDER

Northern Plains Resource Council, et al. ("Plaintiffs") filed this action to challenge the decision of the United States Army Corps of Engineers ("Corps") to reissue Nationwide Permit 12 ("NWP 12") in 2017. (Doc. 36.) Plaintiffs allege five claims in their Amended Complaint. (*Id.*) Claims Three and Five relate to the Corps' verification of the Keystone XL Pipeline crossings of the Yellowstone River and the Cheyenne River. (Doc. 36 at 78-81, 85-87.) The Court stayed

Plaintiffs' Claims Three and Five pending further action by the Corps. (Doc. 56 at 1.)

Plaintiffs' Claims One, Two, and Four relate to the Corps' reissuance of NWP 12 in 2017. Plaintiffs allege that the Corps' reissuance of NWP 12 violated the Endangered Species Act ("ESA"), the National Environmental Policy Act ("NEPA"), and the Clean Water Act ("CWA"). (Doc. 36 at 73-77, 81-84.) Plaintiffs, Defendants the Corps, et al. ("Federal Defendants"), and Intervenor-Defendants TC Energy Corporation, et al. ("TC Energy") filed cross-motions for partial summary judgment regarding Plaintiffs' Claims One, Two, and Four. (Docs. 72, 87, 90.) Intervenor-Defendants the State of Montana and American Gas Association, et al., filed briefs in support of Defendants. (Docs. 92 & 93.) Amici Curiae Edison Electric Institute, et al., and Montana Petroleum Association, et al., also filed briefs in support of Defendants. (Docs. 106 & 122.)

BACKGROUND

Congress enacted the CWA to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). To that end, the Corps regulates the discharge of any pollutant, including dredged or fill material, into jurisdictional waters. *See* 33 U.S.C. §§ 1311, 1362(6), (7), (12). Section 404 of the CWA requires any party seeking to construct a project that will

discharge dredged or fill material into jurisdictional waters to obtain a permit. *See* 33 U.S.C. § 1344(a), (e).

The Corps oversees the permitting process. The Corps issues individual permits on a case-by-case basis. 33 U.S.C. § 1344(a). The Corps also issues general nationwide permits to streamline the permitting process for certain categories of activities. 33 U.S.C. § 1344(e). The Corps issues nationwide permits for categories of activities that are "similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment." 33 U.S.C. § 1344(e)(1). Nationwide permits may last up to five years, at which point they must be reissued or left to expire. 33 U.S.C. § 1344(e)(2).

The Corps issued NWP 12 for the first time in 1977 and reissued it most recently in 2017. 82 Fed. Reg. 1860, 1860, 1985-86 (January 6, 2017). NWP 12 authorizes discharges of dredged or fill material into jurisdictional waters as required for the construction, maintenance, repair, and removal of utility lines and associated facilities. 82 Fed. Reg. at 1985-86. Utility lines include electric, telephone, internet, radio, and television cables, lines, and wires, as well as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, including oil and gas pipelines. 82 Fed. Reg. at 1985. The discharge may not result in the loss of greater than one-half acre of jurisdictional waters for

each single and complete project. 82 Fed. Reg. at 1985. For linear projects like pipelines that cross a single waterbody several times at separate and distant locations, or cross multiple waterbodies several times, each crossing represents a single and complete project. 82 Fed. Reg. at 2007. Activities meeting NWP 12's conditions may proceed without further interaction with the Corps. *See Nat'l Wildlife Fed'n v. Brownlee*, 402 F. Supp. 2d 1, 3 (D.D.C. 2005).

A permittee must submit a preconstruction notification ("PCN") to the Corps' district engineer before beginning a proposed activity if the activity will result in the loss of greater than one-tenth acre of jurisdictional waters. 82 Fed. Reg. at 1986. Additional circumstances exist under which a permittee must submit a PCN to a district engineer. *See* 82 Fed. Reg. at 1986. The PCN for a linear utility line must address the water crossing that triggered the need for a PCN as well as the other separate and distant crossings that did not themselves require a PCN. 82 Fed. Reg. at 1986. The district engineer will evaluate the individual crossings to determine whether each crossing satisfies NWP 12. 82 Fed. Reg. at 2004-05. The district engineer also will evaluate the cumulative effects of the proposed activity caused by all of the crossings authorized by NWP 12. *Id.*

All nationwide permits, including NWP 12, remain subject to 32 General Conditions contained in the Federal Regulations. 82 Fed. Reg. 1998-2005. General Condition 18 prohibits the use of any nationwide permit for activities that are

likely to directly or indirectly jeopardize threatened or endangered species under the ESA or destroy or adversely modify designated critical habitat for such species. 82 Fed. Reg. at 1999-2000.

The ESA and NEPA require the Corps to consider the environmental impacts of its actions. Section 7(a)(2) of the ESA requires the Corps to determine "at the earliest possible time" whether any action it takes "may affect" listed species and critical habitat. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a). If the Corps' action "may affect" listed species or critical habitat, the Corps must consult with U.S. Fish and Wildlife Service ("FWS") and/or National Marine Fisheries Service ("NMFS") (collectively, "the Services"). 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a). Under NEPA, the Corps must produce an environmental impact statement unless it issues a finding of no significant impact (FONSI). 42 U.S.C. § 4332(C); 40 C.F.R. § 1508.9.

The Corps issued a final Decision Document explaining NWP 12's environmental impacts when it reissued NWP 12 in 2017. NWP005262-5349. The Corps determined that NWP 12 would result in "no more than minimal individual and cumulative adverse effects on the aquatic environment" under the CWA. NWP005340. The Corps also concluded that NWP 12 complied with both the ESA and NEPA. NWP005324, 5340. The Decision Document comprised a FONSI under NEPA. NWP005340.

The Corps explained that its 2017 reissuance of NWP 12 complied with the ESA because NWP 12 would not affect listed species or critical habitat. NWP005324. The Corps did not consult with the Services based on its "no effect" determination. NWP005324-25. A federal district court in 2005 concluded that the Corps should have consulted with FWS when it reissued NWP 12 in 2002. *Brownlee*, 402 F. Supp. 2d at 9-11. The Corps initiated formal programmatic consultation with the Services when it reissued NWP 12 in 2007. NWP031044. The Corps continued the programmatic consultation when it reissued NWP 12 in 2012. *Id.*

LEGAL STANDARD

A court should grant summary judgment where the movant demonstrates that no genuine dispute exists "as to any material fact" and the movant is "entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). Summary judgment remains appropriate for resolving a challenge to a federal agency's actions when review will be based primarily on the administrative record. *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 778 (9th Cir. 2006).

The Administrative Procedure Act's ("APA") standard of review governs Plaintiffs' claims. *See W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 481 (9th Cir. 2011). The APA instructs a reviewing court to "hold unlawful and set

aside" agency action deemed "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

DISCUSSION

I. ENDANGERED SPECIES ACT

A. ESA Section 7(a)(2) Consultation

Section 7(a)(2) of the ESA requires the Corps to ensure any action that it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any listed species or destroy or adversely modify designated critical habitat. 16 U.S.C. § 1536(a)(2). The Corps must review its actions "at the earliest possible time" to determine whether an action "may affect" listed species or critical habitat. 50 C.F.R. § 402.14(a). The Corps must initiate formal consultation with the Services if the Corps determines that an action "may affect" listed species or critical habitat. 50 C.F.R. § 402.14; 16 U.S.C. § 1536(a)(2). The ESA does not require Section 7(a)(2) consultation if the Corps determines that a proposed action is not likely to adversely affect any listed species or critical habitat. 50 C.F.R. § 402.14(b)(1).

Formal consultation is a process that occurs between the Services and the Corps. 50 C.F.R. § 402.02. The process begins with the Corps' written request for consultation under ESA Section 7(a)(2) and concludes with the Services' issuance of a biological opinion. 50 C.F.R. § 402.02. A biological opinion states the

Services' opinion as to whether the Corps' action likely would jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. *Id.*

Programmatic consultation involves a type of consultation that addresses multiple agency actions on a programmatic basis. 50 C.F.R. § 402.02. Programmatic consultations allow the Services to consult on the effects of a programmatic action such as a "proposed program, plan, policy, or regulation" that provides a framework for future proposed actions. *Id.*

B. The Corps' Reissuance of NWP 12 in 2017

The Corps concluded that its reissuance of NWP 12 in 2017 would have no effect on listed species or critical habitat. 82 Fed. Reg. at 1873-74; *see also* 81 Fed. Reg. 35186, 35193 (June 1, 2016). General Condition 18 provides that a nationwide permit does not authorize an activity that is "likely to directly or indirectly jeopardize the continued existence of a" listed species or that "will directly or indirectly destroy or adversely modify the critical habitat of such species." 82 Fed. Reg. at 1999.

A non-federal permittee must submit a PCN to the district engineer if a proposed activity "might" affect any listed species or critical habitat. 82 Fed. Reg. at 1999. The permittee may not begin work on the proposed activity until the district engineer notifies the permittee that the activity complies with the ESA and

that the activity is authorized. *Id.* The Corps determined that General Condition 18 ensures that NWP 12 will have no effect on listed species or critical habitat. NWP005324-26. The Corps declined to initiate Section 7(a)(2) consultation based on that determination. *Id.*

C. The Corps Acted Arbitrarily and Capriciously

Plaintiffs argue that the Corps' failure to initiate Section 7(a)(2) consultation violates the ESA. (Doc. 36 at 6.) Plaintiffs assert that the Corps should have initiated programmatic consultation when it reissued NWP 12 in 2017. (Doc. 36 at 6.) Defendants argue that the Corps properly assessed NWP 12's potential effects and did not need to initiate Section 7(a)(2) consultation. (Doc. 88 at 43.) Defendants assert that the Corps did not need to conduct programmatic consultation because project-level review and General Condition 18 ensure that NWP 12 will not affect listed species or critical habitat. (Doc. 88 at 46.)

To determine whether the Corps' "no effect" determination and resulting failure to initiate programmatic consultation proves arbitrary and capricious, the Court must decide whether the Corps "considered the relevant factors and articulated a rational connection between the facts found and the choice made." *See Nat'l Ass'n of Home Builders v. Norton*, 340 F.3d 835, 841 (9th Cir. 2003) (quoting *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 105 (1983)). The Corps' decisions are entitled to deference. *See Kisor v. Wilkie,* 139 S.

Ct. 2400, 2417-18 (2019); *Chevron, U.S.A. v. Nat. Res. Def. Council*, 467 U.S. 837, 844 (1984).

Programmatic consultation proves appropriate when an agency's proposed action provides a framework for future proposed actions. 50 C.F.R. § 402.02. Federal actions subject to programmatic consultation include federal agency programs. *See* 80 Fed. Reg. 26832, 26835 (May 11, 2015); 50 C.F.R. 402.02. A federal agency may develop those programs at the national scale. *Id.* The Services specifically have listed the Corps' nationwide permit program as an example of the type of federal program that provides a national-scale framework and that would be subject to programmatic consultation. *See* 80 Fed. Reg. at 26835.

Programmatic consultation considers the effect of an agency's proposed activity as a whole. A biological opinion analyzes whether an agency action likely would jeopardize a listed species or adversely modify designated critical habitat. 50 C.F.R. §§ 402.02, 402.14(h). This type of analysis allows for a broad-scale examination of a nationwide program's potential impacts on listed species and critical habitat. *See* 80 Fed. Reg. at 26836. A biological opinion may rely on qualitative analysis to determine whether a nationwide program and the program's set of measures intended to minimize impacts or conserve listed species adequately protect listed species and critical habitat. *Id.* Programmatic-level biological opinions examine how the overall parameters of a nationwide program align with

the survival and recovery of listed species. *Id.* An agency should analyze those types of potential impacts in the context of the overall framework of a programmatic action. A broad examination may not be conducted as readily at a later date when the subsequent activity would occur. *Id.*

The Ninth Circuit in *Western Watersheds Project v. Kraayenbrink*, 632 F.3d at 472, evaluated amendments that the Bureau of Land Management ("BLM") made to national grazing regulations. BLM viewed the amendments as purely administrative and determined that they had "no effect" on listed species or critical habitat. *Id.* at 496. The Ninth Circuit rejected BLM's position based on "resounding evidence" from experts that the amendments "'may affect' listed species and their habitat." *Id.* at 498. The amendments did not qualify as purely administrative. The amendments altered ownership rights to water on public lands, increased barriers to public involvement in grazing management, and substantially delayed enforcement of failing allotments. *Id.* The amendments would have a substantive effect on listed species. *Id.*

There similarly exists "resounding evidence" in this case that the Corps' reissuance of NWP 12 "may affect" listed species and their habitat. NWP 12 authorizes limited discharges of dredged or fill material into jurisdictional waters. 82 Fed. Reg. at 1985. The Corps itself acknowledged the many risks associated

with the discharges authorized by NWP 12 when it reissued NWP 12 in 2017. NWP005306.

The Corps noted that activities authorized by past versions of NWP 12 "have resulted in direct and indirect impacts to wetlands, streams, and other aquatic resources." NWP005306. Discharges of dredged or fill material can have both permanent and temporary consequences. *Id.* The discharges permanently may convert wetlands, streams, and other aquatic resources to upland areas, resulting in permanent losses of aquatic resource functions and services. The discharges also temporarily may fill certain areas, causing short-term or partial losses of aquatic resource functions and services. *Id.*

The Corps examined the effect of human activity on the Earth's ecosystems. NWP005307. Human activities affect all marine ecosystems. *Id.* Human activities alter ecosystem structure and function by changing the ecosystem's interaction with other ecosystems, the ecosystem's biogeochemical cycles, and the ecosystem's species composition. *Id.* "Changes in land use reduce the ability of ecosystems to produce ecosystem services, such as food production, reducing infectious diseases, and regulating climate and air quality." *Id.* Water flow changes, land use changes, and chemical additions alter freshwater ecosystems such as lakes, rivers, and streams. NWP005308. The construction of utility lines "*will* fragment terrestrial and aquatic ecosystems." *Id.* (emphasis added).

The Corps more specifically discussed that land use changes affect rivers and streams through increased sedimentation, larger inputs of nutrients and pollutants, altered stream hydrology, the alteration or removal of riparian vegetation, and the reduction or elimination of inputs of large woody debris. NWP005310. Increased inputs of sediments, nutrients, and pollutants adversely affect stream water quality. *Id.* Fill and excavation activities cause wetland degradation and losses. NWP005310-11. The Corps emphasized that, although "activities regulated by the Corps under Section 404 of the [CWA]" are "common causes of impairment for rivers and streams, habitat alterations and flow alterations," a wide variety of causes and sources impair the Nation's rivers and streams. NWP005311.

The ESA provides a low threshold for Section 7(a)(2) consultation: An agency must initiate formal consultation for any activity that "may affect" listed species and critical habitat. 50 C.F.R. § 402.14; 16 U.S.C. § 1536(a)(2). The Corps itself has stated that discharges authorized by NWP 12 "*will* result in a minor incremental contribution to the cumulative effects to wetlands, streams, and other aquatic resources in the United States." NWP005313. The types of discharges that NWP 12 authorizes "may affect" listed species and critical habitat, as evidenced in the Corps' own Decision Document. The Corps should have initiated Section 7(a)(2) consultation before it reissued NWP 12 in 2017.

Plaintiffs' experts' declarations further support the Court's conclusion that the Corps should have initiated Section 7(a)(2) consultation. These expert declarants state that the Corps' issuance of NWP 12 authorizes discharges that may affect endangered species and their habitats. The ESA's citizen suit provision allows the Court to consider evidence outside the administrative record in its review of Plaintiffs' ESA claim. *See* 16 U.S.C. § 1540(g); *W. Watersheds*, 632 F.3d at 497.

Martin J. Hamel, Ph.D., an assistant professor at the University of Georgia who studies anthropogenic and invasive species' impacts on native riverine species, submitted a declaration stating that the discharges authorized by NWP 12 may affect adversely pallid sturgeon, an endangered species. (Doc. 73-4 at 2, 4, 6.) Pallid sturgeon remain susceptible to harm from pollution and sedimentation in rivers and streams because pollution and sedimentation can bury the substrates on which sturgeon rely for feeding and breeding. (*Id.* at 4.) Fine sentiments can lodge between coarse grains of substrate to form a hardpan layer, thereby reducing interstitial flow rates and ultimately reducing available food sources. Construction activities that increase sediment loading pose a significant threat to the pallid sturgeon populations in Nebraska and Montana. (*Id.*)

Dr. Hamel also stated his understanding that the horizontal directional drilling method ("HDD") for crossing waterways may result in less sedimentation

of the waterway than other construction methods, such as open trench cuts. (Doc. 73-4 at 5.) HDD can result, however, in an inadvertent return of drilling fluid. An inadvertent return of drilling fluid would result in increased sedimentation and turbidity, which would affect aquatic biota such as pallid sturgeon and the species sturgeon rely on as food sources. (*Id.*)

Jon C. Bedick, Ph.D., a professor of biology at Shawnee State University who has worked extensively with the endangered American burying beetle, submitted a declaration detailing his concerns regarding the Corps' failure to analyze NWP 12's threat to the American burying beetle. (Doc. 73-1 at 2-3, 5.) Certain construction activities, including those approved by NWP 12, can cause harm to species such as the American burying beetle. (*Id.* at 5.) Dr. Bedick relayed his concern that the Corps failed to undertake a programmatic consultation with FWS regarding its reissuance of NWP 12. (*Id.*)

NWP 12 authorizes actual discharges of dredged or fill material into jurisdictional waters. 82 Fed. Reg. at 1985. Two experts have declared that the discharges authorized by NWP 12 will affect endangered species. (Docs. 71-1 & 71-3.) The Corps itself has acknowledged that the discharges *will* contribute to the cumulative effects to wetlands, streams, and other aquatic resources. NWP005313. There exists "resounding evidence" from experts and from the Corps that the

discharges authorized by NWP 12 may affect listed species and critical habitat. *See W. Watersheds*, 632 F.3d at 498.

The Corps cannot circumvent ESA Section 7(a)(2) consultation requirements by relying on project-level review or General Condition 18. *See* 82 Fed. Reg. 1999; *Conner v. Burford*, 848 F.2d 1441, 1457-58 (9th Cir. 1988). Project-level review does not relieve the Corps of its duty to consult on the issuance of nationwide permits at the programmatic level. The Corps must consider the effect of the entire agency action. *See Conner*, 848 F.2d at 1453-58 (concluding that biological opinions must be coextensive with an agency's action and rejecting the Services' deferral of an impacts analysis to a project-specific stage). The Federal Regulations make clear that "[a]ny request for formal consultation may encompass . . . a number of similar individual actions within a given geographical area, a programmatic consultation, or a segment of a comprehensive plan." 50 C.F.R. § 402.14(c)(4). The regulations do "not relieve the Federal agency of the requirements for considering the effects of the action or actions as a whole." *Id.*; *see also Cottonwood Envtl. Law Center v. U.S. Forest Serv.*, 789 F.3d 1075, 1085 (9th Cir. 2015) (concluding that the Forest Service needed to reinitiate consultation at programmatic level); *Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv.*, 482 F. Supp. 2d 1248, 1266-

67 (W.D. Wash. 2007) (holding that deferral of analysis to the project level "improperly curtails the discussion of cumulative effects").

The Ninth Circuit in *Lane County Audubon Soc'y v. Jamison*, 958 F.2d 290 (9th Cir. 1992), analyzed what had become commonly known as the "Jamison Strategy." Under the Jamison Strategy, BLM would select land for logging consistent with the protection of the spotted owl. *Id.* at 291. BLM would submit individual timber sales for ESA consultation with FWS, but would not submit the overall logging strategy itself. *Id.* at 292. The Ninth Circuit determined that the Jamison Strategy constituted an action that may affect the spotted owl, because the strategy set forth criteria for harvesting owl habitat. *Id.* at 294. BLM needed to submit the Jamison Strategy to FWS for consultation before BLM implemented the strategy through the adoption of individual sale programs. BLM violated the ESA by not consulting with FWS before it implemented the Jamison Strategy. *Id.*

The district court in *National Wildlife Federation v. Brownlee*, 402 F. Supp. 2d at 10, relied, in part, on the Ninth Circuit's holding in *Lane County* when it determined that the Corps' reissuance of NWP 12 in 2002 violated the ESA. In *Brownlee*, the Corps had failed to consult with FWS when it reissued NWP 12 and three other nationwide permits in 2002. *Id.* at 2, 10. Two environmental groups challenged the Corps' failure to consult. *Id.* at 2. The environmental groups argued

that the nationwide permits, including NWP 12, authorized development that threatened the endangered Florida panther. *Id.*

The Corps asserted that NWP 12 complied with the ESA because project-level review would ensure that no harm befell Florida panthers and their habitats. *Id.* at 10. The court disagreed. *Id.* NWP 12 and the other nationwide permits authorized development projects that posed a potential threat to the panther. *Id.* at 3. Large portions of panther habitat existed on lands that could not be developed without a permit from the Corps. *Id.* at 3. Project-level review did not relieve the Corps from considering the effects of NWP 12 as a whole. *Id.* at 10 (citing 50 C.F.R. § 402.14(c)). The Corps needed to initiate overall consultation for the nationwide permits "to avoid piece-meal destruction of panther habitat through failure to make a cumulative analysis of the program as a whole." *Id.*

The same holds true here. Programmatic review of NWP 12 in its entirety, as required by the ESA for any project that "may affect" listed species or critical habitat, provides the only way to avoid piecemeal destruction of species and habitat. *See Brownlee*, 402 F. Supp. 2d at 10; 50 C.F.R. § 402.14(c). Project-level review, by itself, cannot ensure that the discharges authorized by NWP 12 will not jeopardize listed species or adversely modify critical habitat. The Corps has an ongoing duty under ESA Section 7(a)(2) to ensure that its actions are not likely to jeopardize the continued existence of endangered and threatened species or result

in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536(a)(2). The Corps failed to fulfill that duty when it reissued NWP 12 in 2017.

The Court certainly presumes that the Corps, the Services, and permittees will comply with all applicable statutes and regulations. *See, e.g.*, *United States v. Norton*, 97 U.S. 164, 168 (1887) ("It is a presumption of law that officials and citizens obey the law and do their duty."); *Brownlee*, 402 F. Supp. 2d at 5 n.7 (presuming that permittees will comply with the law and seek the Corps' approval before proceeding with activities affecting endangered species). That presumption does not allow the Corps to delegate its duties under the ESA to permittees.

General Condition 18 fails to ensure that the Corps fulfills *its* obligations under ESA Section 7(a)(2) because it delegates the Corps' initial effect determination to non-federal permittees. The Corps must determine "at the earliest possible time" whether its actions "may affect listed species or critical habitat." *See* 50 C.F.R. § 402.14(a). The Corps decided that NWP 12 does not affect listed species or critical habitat because General Condition 18 ensures adequate protection. NWP005324-26. General Condition 18 instructs a non-federal permittee to submit a PCN to the district engineer if the permittee believes that its activity "might" affect listed species or critical habitat. 82 Fed. Reg. at 1999-2000. In that sense, General Condition 18 turns the ESA's initial effect determination

over to non-federal permittees, even though the Corps must make that initial determination. *See* 50 C.F.R. § 402.14(a). The Corps' attempt to delegate its duty to determine whether NWP 12-authorized activities will affect listed species or critical habitat fails.

The Corps remains well aware that its reauthorization of NWP 12 required Section 7(a)(2) consultation given the fact that it initiated formal consultation when it reissued NWP 12 in 2007 and continued that consultation during the 2012 reissuance. NWP031044. NMFS released a biological opinion, which concluded that the Corps' implementation of the nationwide permit program has had "more than minimal adverse environmental effects on the aquatic environment when performed separately or cumulatively." (Doc. 75-9 at 222-23.) The Corps reinitiated consultation to address NMFS's concerns, and NMFS issued a new biological opinion in 2014. NWP030590. The Corps' prior consultations underscore the need for programmatic consultation when the Corps reissued NWP 12 in 2017.

Substantial evidence exists that the Corps' reissuance of NWP 12 "may affect" listed species and critical habitat. This substantial evidence requires the Corps to initiate consultation under ESA Section 7(a)(2) to ensure that the discharge activities authorized under NWP 12 comply with the ESA. *See* 16 U.S.C. § 1536(a)(2); 50 C.F.R. §§ 402.02, 402.14. The Corps failed to consider relevant

expert analysis and failed to articulate a rational connection between the facts it found and the choice it made. *See W. Watersheds*, 632 F.3d at 498. The Corps' "no effect" determination and resulting decision to forego programmatic consultation proves arbitrary and capricious in violation of the Corps' obligations under the ESA. The Corps should have initiated ESA Section 7(a)(2) consultation before it reissued NWP 12 in 2017. The Corps' failure to do so violated the ESA.

These failures by the Corps entitle the Plaintiffs to summary judgment regarding their ESA Claim. The Court will remand NWP 12 to the Corps for compliance with the ESA. The Court vacates NWP 12 pending completion of the consultation process. The Court further enjoins the Corps from authorizing any dredge or fill activities under NWP 12.

II. PLAINTIFFS' REMAINING CLAIMS

Plaintiffs further allege that NWP 12 violates both NEPA and the CWA. (Doc. 36 at 73-77, 81-84.) Plaintiffs, the Corps, and TC Energy each have moved for summary judgment regarding Plaintiffs' NEPA and CWA Claims. (Doc. 72 at 2; Doc. 87 at 2; Doc. 90 at 2.) The Court already has determined that the Corps' reissuance of NWP 12 violated the ESA, remanded NWP 12 to the Corps for compliance with the ESA, and vacated NWP 12 pending completion of the consultation process.

The Court anticipates that the Corps may need to modify its NEPA and CWA determinations based on the Corps' ESA Section 7(a)(2) consultation with the Services, as briefly discussed below. The Court will deny without prejudice all parties' motions for summary judgment regarding Plaintiffs' NEPA and CWA claims pending ESA Section 7(a)(2) consultation and any further action by the Corps.

A. The National Environmental Policy Act

Plaintiffs allege that NWP 12 violates NEPA because the Corps failed to evaluate adequately NWP 12's environmental impacts. (Doc. 36 at 4.) Congress enacted NEPA to ensure that the federal government considers the environmental consequences of its actions. *See* 42 U.S.C. 4331(b)(1). NEPA proves, in essence, to be a procedural statute designed to ensure that federal agencies make fully informed and well-considered decisions. *Sierra Club v. U.S. Army Corps of Eng'rs*, 990 F. Supp. 2d 9, 18 (D.D.C. 2013). NEPA does not mandate particular results, but instead prescribes a process to ensure that agencies consider, and that the public is informed about, potential environmental consequences. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

NEPA requires a federal agency to evaluate the environmental consequences of any major federal action "significantly affecting the quality of the human environment" before undertaking the proposed action. 42 U.S.C. § 4332(C). A

federal agency evaluates the environmental consequences of a major federal action through the preparation of a detailed environmental impact statement ("EIS"). 40 C.F.R. § 1501.4. An agency may opt first to prepare a less-detailed environmental assessment ("EA") to determine whether a proposed action qualifies as a "major federal action significantly affecting the quality of the human environment" that requires an EIS. *Id.* The agency need not provide any further environmental report if the EA shows that the proposed action will not have a significant effect on the quality of the human environment. 40 C.F.R. § 1501.4(e); *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 757-58 (2004).

The Corps conducted an EA in the process of reissuing NWP 12. NWP005289. The Corps determined that the issuance of NWP 12 would not have a significant impact on the quality of the human environment. NWP005340. The Corps accordingly concluded that it did not need to prepare an EIS. *Id.* Plaintiffs argue that the EA proves insufficient under NEPA for various reasons. (Doc. 73 at 17-34.)

The Decision Document detailed NWP 12's environmental consequences. NWP005303-5317. The Court anticipates that the ESA Section 7(a)(2) consultation will further inform the Corps' NEPA assessment of NWP 12's environmental consequences. Armed with more information, the Corps may decide to prepare an EIS because NWP 12 represents a major federal action that

significantly affects the quality of the human environment. *See* 42 U.S.C. § 4332(C); 40 C.F.R. § 1501.4.

B. The Clean Water Act

Section 404(e) of the CWA allows the Corps to issue nationwide permits for categories of activities that "will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment." 33 U.S.C. § 1344(e)(1). The Decision Document evaluated NWP 12's compliance with CWA Section 404 permitting guidelines. NWP005340. The Corps concluded that the discharges authorized by NWP 12 comply with the CWA. *Id.* The Corps specifically noted that the activities authorized by NWP 12 "will result in no more than minimal individual and cumulative adverse effects on the aquatic environment." *Id.*

Plaintiffs allege that NWP 12 violates the CWA because NWP 12 authorizes activities that will cause more than minimal adverse environmental effects. (Doc. 36 at 5.) Plaintiffs note that, although NWP 12 authorizes projects that would result in no more than one-half acre of water loss, linear utility lines may use NWP 12 repeatedly for many water crossings along a project's length. Plaintiffs argue that this repeated use causes more than minimal adverse environmental effects. (*Id.*)

The Court similarly anticipates that the ESA Section 7(a)(2) consultation will inform the Corps' CWA assessment of NWP 12's environmental effects. The

Corps' adverse effects analyses and resulting CWA compliance determination may change after ESA Section 7(a)(2) consultation brings more information to light.

At this point in the litigation, the Court does not need to determine whether the Corps made a fully informed and well-considered decision under NEPA and the CWA when it reissued NWP 12 in 2017. The Court has remanded NWP 12 to the Corps for ESA Section 7(a)(2) consultation. The Court anticipates that the Corps will conduct additional environmental analyzes based on the findings of the consultation.

ORDER

It is hereby **ORDERED** that:

1. Plaintiffs' Motion for Partial Summary Judgment (Doc. 72) is **GRANTED, IN PART, and DENIED WITHOUT PREJUDICE, IN PART**. The Court grants Plaintiffs' motion for summary judgment regarding Plaintiffs' ESA Claim, Claim Four. The Court denies without prejudice Plaintiffs' motions for summary judgment regarding Plaintiffs' NEPA and CWA Claims, Claims One and Two.

2. Federal Defendants' Motion for Partial Summary Judgment (Doc. 87) is **DENIED, IN PART, and DENIED WITHOUT PREJUDICE, IN PART.** The Court denies Federal Defendants' motion for summary judgment regarding Plaintiffs' ESA Claim, Claim Four. The Court denies without prejudice Federal

Defendants' motions for summary judgment regarding Plaintiffs' NEPA and CWA Claims, Claims One and Two.

3. TC Energy's Motion for Partial Summary Judgment (Doc. 90) is **DENIED, IN PART, and DENIED WITHOUT PREJUDICE, IN PART**. The Court denies TC Energy's motion for summary judgment regarding Plaintiffs' ESA Claim, Claim Four. The Court denies without prejudice TC Energy's motions for summary judgment regarding Plaintiffs' NEPA and CWA Claims, Claims One and Two.

4. NWP 12 is remanded to the Corps for compliance with the ESA.

5. NWP 12 is vacated pending completion of the consultation process and compliance with all environmental statutes and regulations.

6. The Corps is enjoined from authoring any dredge or fill activities under NWP 12 pending completion of the consultation process and compliance with all environmental statutes and regulations.

DATED this 15th day of April, 2020.

Brian Morris, Chief District Judge
United States District Court