NOTICE OF CONFIDENTIALITY
ATTACHMENTS TO THIS TESTIMONY HAVE BEEN FILED UNDER SEAL

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

*** * * * ***

RE: IN THE MATTER OF ADVICE NO.	**)**	
1797-ELECTRIC OF PUBLIC SERVICE	**)**	
COMPANY OF COLORADO TO REVISE	**)**	
ITS COLORADO P.U.C. NO. 8-	**)**	**PROCEEDING NO. 19AL-_____E**
ELECTRIC TARIFF TO IMPLEMENT	**)**	
RATE CHANGES EFFECTIVE ON	**)**	
THIRTY-DAYS' NOTICE.	**)**	

DIRECT TESTIMONY AND ATTACHMENTS OF DANIEL C. BROWN

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

NOTICE OF CONFIDENTIALITY
AN ATTACHMENT TO THIS TESTIMONY HAVE BEEN FILED UNDER SEAL

Confidential: Confidential Attachment DCB-6

May 20, 2019

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO**

*** * * * ***

RE: IN THE MATTER OF ADVICE NO.	**)**	
1797-ELECTRIC OF PUBLIC SERVICE	**)**	
COMPANY OF COLORADO TO REVISE	**)**	
ITS COLORADO P.U.C. NO. 8-	**)**	**PROCEEDING NO. 19AL-_____E**
ELECTRIC TARIFF TO IMPLEMENT	**)**	
RATE CHANGES EFFECTIVE ON	**)**	
THIRTY-DAYS' NOTICE.	**)**	

DIRECT TESTIMONY AND ATTACHMENTS OF DANIEL C. BROWN

TABLE OF CONTENTS

SECTION **PAGE**

LIST OF ATTACHMENTS

Attachment DCB-1	Detail Timeline of PTT Initiative
Attachment DCB-2	Costs and Benefits of PTT Initiative
Attachment DCB-3	2014–2018 Plant Additions
Attachment DCB-4	2019 Plant Additions
Attachment DCB-5	PTT Capital Expenditures: Actual vs. Forecast
Confidential Attachment DCB-6	Cost Benchmarking Data
Public Attachment DCB-6	Public Version of Cost Benchmarking Data
Attachment DCB-7	PTT O&M Expenses by Cost Element
Attachment DCB-8	PTT O&M Expenses by FERC Account

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
2014 Electric Phase I	Proceeding No. 14AL-0660E
2015 Gas Phase I	Proceeding No. 15AL-0135G
2017 Gas Phase I	Proceeding No. 17AL-0363G
ALJ	Administrative Law Judge
Commission	Colorado Public Utilities Commission
ETO	Enterprise Transformation Office
FERC	Federal Energy Regulatory Commission
GAAP	Generally Accepted Accounting Principles
GL	General Ledger
HTY	Historical Test Year
ITO	Innovation and Transformation Office
JDE	JD Edwards
Maximo	Maximo 5.2
O&M	Operations and Maintenance
PMO	Program Management Office
PTT	Productivity Through Technology
Public Service, or the Company	Public Service Company of Colorado
RFI	Request for Information
RFP	Request for Proposal
SAP platform	SAP Enterprise Resource Planning Platform
S&O	Stabilize and Optimize

Acronym/Defined Term	**Meaning**
WAM	Work and Asset Management
Xcel Energy	Xcel Energy Inc.
XES	Xcel Energy Services Inc.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

*** * * * ***

RE: IN THE MATTER OF ADVICE NO.	**)**	
1797-ELECTRIC OF PUBLIC SERVICE	**)**	
COMPANY OF COLORADO TO REVISE	**)**	
ITS COLORADO P.U.C. NO. 8-	**)**	**PROCEEDING NO. 19AL-_____E**
ELECTRIC TARIFF TO IMPLEMENT	**)**	
RATE CHANGES EFFECTIVE ON	**)**	
THIRTY-DAYS' NOTICE.	**)**	

DIRECT TESTIMONY AND ATTACHMENTS OF DANIEL C. BROWN

I. INTRODUCTION, QUALIFICATIONS, PURPOSE OF TESTIMONY, AND RECOMMENDATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Daniel C. Brown. My business address is 1800 Larimer Street, Denver, Colorado 80202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

Q. I am employed by Xcel Energy Services, Inc ("XES") as Director of PMO - Innovation and Transformation. XES is a wholly-owned subsidiary of Xcel Energy, Inc. ("Xcel Energy"), and provides an array of support services to Public Service Company of Colorado ("Public Service" or the "Company") and other utility operating company subsidiaries of Xcel Energy on a coordinated basis.

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

A. I am testifying on behalf of Public Service.

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.

A. As the Director of Program Management Office ("PMO") – Innovation and Transformation, I am responsible for program management, which includes managing scope, budget, resources, governance, and status for transformational programs for Xcel Energy. I also currently serve as Program Director for the Stabilize & Optimize ("S&O") phase of work. I previously served in a similar role as Program Director for Xcel Energy's Productivity Through Technology ("PTT") program from 2015 through 2017 during Xcel Energy's Work and Asset Management ("WAM") and General Ledger ("GL") deployment. A description of my qualifications, duties, and responsibilities is set forth after the conclusion of my Direct Testimony in my Statement of Qualifications.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to support Public Service's plant in-service additions associated with its PTT initiative since the last rate case, for 2014 through 2019, which are appropriately allocated to Public Service retail electric and included in the 2018 Historical Test Year ("HTY") cost of service that is presented by Company witness Ms. Deborah A. Blair. The Company's last electric rate case was Proceeding No. 14AL-0660E the ("2014 Electric Phase I"), in which a 2013 HTY was approved. This includes the Company's $149.3 million in 2014-2018 capital additions made during the WAM/GL implementation phase of the Company's PTT initiative, along with $16.3 million in 2019 capital additions associated with the S&O phase of the PTT initiative. Company witness Ms.

Laurie J. Wold has calculated the monthly plant balances to develop the plant-related roll forward, which is in turn used by Ms. Blair to incorporate the year-end plant in-service balances into the 2018 HTY cost of service. I also support the $654,000 in 2018 Operations and Maintenance ("O&M") expenses that are included in the 2018 HTY cost of service.

In presenting this information, I provide an overview of the PTT implementation phase, which the Company completed on time and within forecast in 2017 with the implementation of its new WAM replacement. The PTT initiative is now in its S&O phase, which will last through 2019. I also discuss the benefits to Public Service and its customers of the PTT initiative as a whole.

Q. ARE YOU SPONSORING ANY ATTACHMENTS AS PART OF YOUR DIRECT TESTIMONY?

A. Yes, I am sponsoring Attachments DCB-1 through DCB-8, which were prepared by me or under my direct supervision. These include:

- Attachment DCB-1: Detail Timeline of PTT Initiative
- Attachment DCB-2: Costs and Benefits of PTT Initiative
- Attachment DCB-3: 2014–2018 Plant Additions
- Attachment DCB-4: 2019 Plant Additions
- Attachment DCB-5: PTT Capital Expenditures – Actual vs. Forecast
- Confidential Attachment DCB-6: Cost Benchmarking Data
- Attachment DCB-7: PTT O&M Expenses by Cost Element
- Attachment DCB-8: PTT O&M Expenses by FERC Account

Q. WHAT RECOMMENDATIONS ARE YOU MAKING IN YOUR DIRECT TESTIMONY?

A. As part of approving the cost of service study developed by Ms. Blair, I recommend that the Colorado Public Utilities Commission ("Commission") approve the capital additions and 2018 O&M expense for the GL and WAM replacement projects associated with the PTT initiative, in addition to the capital additions and O&M expense associated with the current S&O phase of this initiative, which are included in our cost of service presented in this case.

II. PRODUCTIVITY THROUGH TECHNOLOGY OVERVIEW

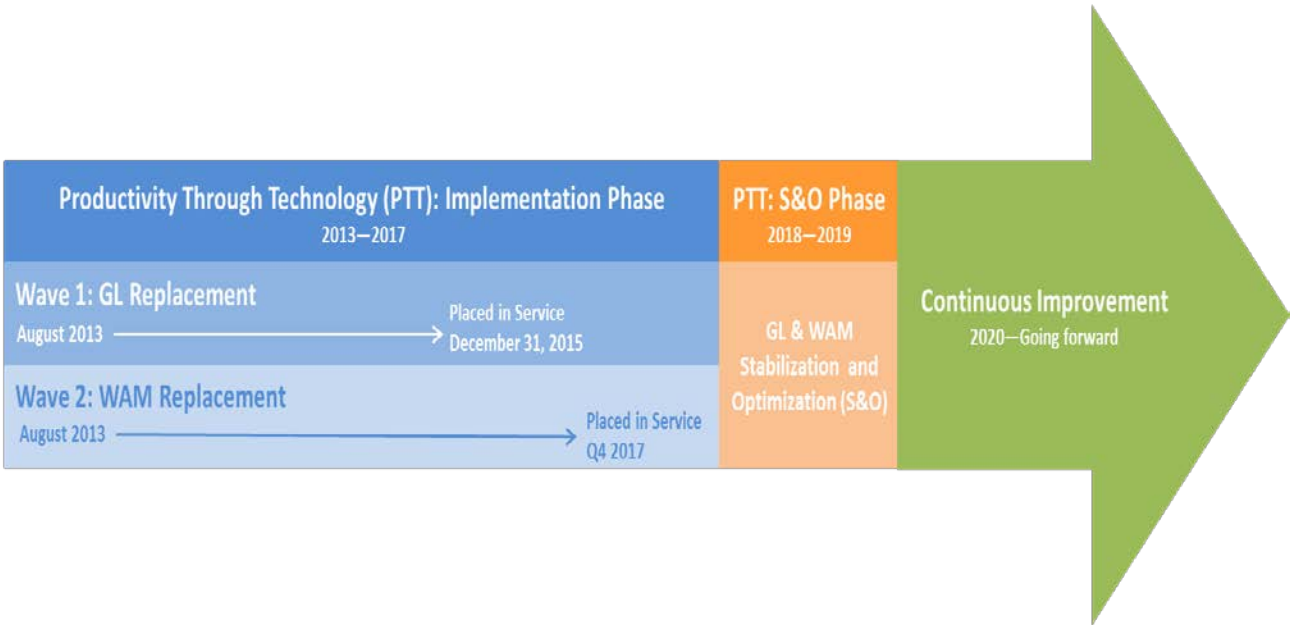
Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my testimony, I provide an overview of the Company's PTT initiative. Specifically, I outline the background of Public Service's PTT initiative, including key work and milestones, and also provide a timeline of the initiative.

Q. WHAT IS PTT?

A. PTT is the name we have given the overall initiative to replace Xcel Energy's outdated GL and WAM systems, which had become obsolete. Overall, PTT has represented a large, integrated effort to replace a set of aging technologies that were central to our business with an SAP Enterprise Resource Planning platform ("SAP platform"). Within this platform, the GL replacement project was placed into service in December 2015. The WAM replacement project was placed into service by the end of 2017, thus completing the initial implementation phase of the PTT initiative. The Company is currently in the S&O phase of its PTT initiative, which it will complete in 2019. This will conclude the Company's PTT initiative, and in 2020, the Company will transition to Continuous Improvement. Figure DCB-D-1, below, provides a visual timeline of the PTT initiative.

Figure DCB-D-1: Visual Timeline of PTT Initiative



Q. HOW ARE THE COMPANY'S PTT AND S&O CAPITAL ADDITIONS AND O&M ALLOCATED BETWEEN OPERATING COMPANIES?

A. Since the PTT initiative (including S&O) has been implemented as a common project across Xcel Energy's operating companies, Public Service's capital and O&M is derived from applying an allocation factor. Company witness Ms. Melissa L. Schmidt explains the Company's cost allocation and assignment process for allocating costs to the Public Service electric utility, and Ms. Wold discusses the Company's allocation of capital charges for IT software projects.

Q. IS THIS THE FIRST TIME THE COMPANY HAS PROVIDED TESTIMONY REGARDING PTT?

A. No. The Company has provided testimony regarding components of PTT in its: (1) 2014 Electric Phase I, Proceeding No. 14AL-0660E; (2) 2015 Gas Rate Case, Proceeding No. 15AL-0135G ("2015 Gas Phase I"); and (3) 2017 Gas Rate Case, Proceeding No. 17AL-0363G ("2017 Gas Rate Case").

Q. PLEASE DESCRIBE THE GL REPLACEMENT PROJECT.

A. The GL replacement project constituted a two-year effort to replace Xcel Energy's accounting environment, which included the GL as well as supporting functions related to the sub-ledger, project tracking, and expenditure allocation.

Q. WHY DID XCEL ENERGY BEGIN IMPLEMENTING A NEW GL WHEN IT DID?

A. The Company's previous JD Edwards ("JDE") GL system was reaching end-of-life and was no longer going to be supported by the vendor. As explained in the Direct Testimony of Timothy C. Brossart filed in the 2017 Gas Rate Case and the Company's 2015 Gas Rate Case,[1] and also detailed below, Xcel Energy investigated several options and determined that replacement was the best option for the GL.

Q. WHAT ARE WORK AND ASSET MANAGEMENT SYSTEMS?

A. WAM systems are the standardized business processes and core technologies for overseeing utility work planning and scheduling, designing jobs and collecting

[1] The Company also provided testimony about its GL replacement project in its 2014 Electric Rate Case (Proceeding No. 14AL-0660E).

costs, outage management, vendor contract management, materials procurement and inventory management, and asset maintenance and support. Prior to transitioning to an SAP platform, Xcel Energy had three core WAM systems.[2] As part of the WAM portion of the PTT initiative, Xcel Energy replaced these three old systems with an integrated SAP solution that provides current technology and works in tandem with our new GL system. Xcel Energy completed placing the WAM replacement project in service by the end of 2017.

Q. WHY DID XCEL ENERGY BEGIN IMPLEMENTING A WAM SOLUTION WHEN IT DID?

A. The previous systems in place had become badly outdated and did not have the functionality needed for a modern utility. Further, given the age of these systems, the original software vendors were no longer providing sufficient support and upgrades against system failure or cyberattacks. This created potential vulnerabilities. It also made repairs more expensive to our customers, with risks of delays that could jeopardize our day-to-day operations. As such, Xcel Energy could no longer delay replacement of these dated technologies.

Q. WHY ARE THE GL AND WAM CONSIDERED PART OF A SINGLE PTT INITIATIVE?

A. Because Xcel Energy's legacy systems were facing the need for replacement at the same time, Xcel Energy investigated the options for replacing these systems

[2] Proceeding No. 17AL-0363G, Brossart Direct, p.15, lines 5-9.

at the same time. We ultimately identified an integrated Enterprise Asset Management System by vendor SAP to replace each of the outdated systems.

Q. PLEASE PROVIDE AN OVERVIEW OF PUBLIC SERVICE'S SYSTEMS PRIOR TO THE PTT INITIATIVE.

A. Prior to the PTT initiative, Xcel Energy was using Oracle's JDE GL system, which was reaching end-of-life and was no longer going to be supported by the vendor as of December 2013. Xcel Energy also had three core WAM systems: Ventyx's Corporate Passport Version 10.0.5 to manage electric and gas distribution, transmission, and supply chain functions; Ventyx Passport 10.0.6 to manage nuclear facilities due to security considerations; and IBM's Maximo Version 5.2 ("Maximo") to support work activities at Energy Supply generation units.

Q. WHAT RISKS DID XCEL ENERGY IDENTIFY WITH ITS CORPORATE PASSPORT SYSTEM AT THE TIME OF ASSESSMENT?

A. In conducting its risk assessment in 2013, Xcel Energy identified a short-term need to replace the Corporate Passport System. At the time, Corporate Passport was a "mission-critical" application, as it managed daily work activity such as preventative maintenance, new construction, and outage response (among other critical functions), handling approximately 77 million transactions annually across Xcel Energy's operating companies alone. The software application environment was on hardware that was discontinued in early 2009. The operating system was an IBM Unix version that was no longer supported by the vendor under

standard agreements. The software code was written in COBOL 4.3, which has been out of standard use for nearly 15 years.

These factors put the Company in a position where any major outage would have required specialized third-party support or sub-optimal hardware sourcing. A backup server onsite was identified for potential use, but if such a backup server had failed during a restoration, this could have resulted in very challenging hardware sourcing through resellers. This possibility created a heightened risk of an unacceptable extended outage.

Q. WHAT RISKS DID THE MAXIMO SYSTEM FACE?

A. Maximo version 5.2 was used to support work activities at our power generation units. Maximo had similar functional capabilities as Passport, in that it was a critical asset for Energy Supply and had 2,180 users. Maximo had multiple single points of failure and unsupported components. IBM stopped providing full relevant support in September of 2010.

Maximo also prevented a number of underlying technologies from progressing in their capabilities.[3] If Maximo were to fail, the interfaces with other critical systems would no longer function. In addition, upgrades to a new internet browser version were not supported by Maximo. Adobe Reader versions used by Maximo users were also unsupported and created user challenges.

[3] 2017 Brossart Direct, p. 28, lines 18–21.

Q. WHAT STEPS DID XCEL ENERGY TAKE TO UNDERSTAND ITS OPTIONS WITH RESPECT TO A SOLUTION FOR THE AGING GL, PASSPORT, AND MAXIMO SYSTEMS?

A. Xcel Energy formed a team to evaluate current versions of our previous applications, as well as software vendors that had a product that could replace all three systems. The team obtained research from industry expert consultants, conducted benchmarking visits with peer utilities that went through a similar decision process in the years prior to our initial review, and brought in internal functional experts for multiple planning sessions to assess these options. Xcel Energy then engaged in a comprehensive system selection process, which took place in 2013, and consisted of a detailed four-phase process, which included: (1) issuing a Request for Information ("RFI"); (2) issuing a Request for Proposals ("RFP"); (3) evaluation of submissions made pursuant to the RFP; and (4) using the information gathered to develop a recommendation. SAP platform had the highest results of the RFP. Based on the information gathered in the benchmarking process and the project selection phases described above, the project team selected an integrated SAP platform as the best solution.

Q. PLEASE SUMMARIZE XCEL ENERGY'S IMPLEMENTATION TIMELINE FOR THE SAP PLATFORM AFTER IT WAS SELECTED.

A. The GL replacement project began with the initial design and requirements phase in August 2013 and was placed in service in December 2015. The WAM replacement project began with the initial design and requirements phase in

August 2013 and was fully deployed by the end of 2017. A high-level depiction of the timeline of Xcel Energy's implementation of its PTT initiative is shown in Figure DCB-D-1, above, with a more detailed timeline provided as Attachment DCB-1. Attachment DCB-1 illustrates the timelines for both the new system evaluation and selection (beginning in 2012) and the new system implementation (ending with the dates the replacement software systems were placed in service).

Q. YOU PREVIOUSLY MENTIONED THE COMPANY HAS COMPLETED ITS INITIAL IMPLEMENTATION PHASE OF THE PTT INITIATIVE AND IS NOW IN ITS "STABILIZE AND OPTIMIZE" PHASE. WHAT DOES THIS MEAN?

A. The deployment of GL and WAM was successfully completed as planned with the final WAM deployment occurring by the end of quarter of 2017. It was recognized early on that following the deployment of this large scale and multi-year project, additional effort would be required to stabilize, and optimize the systems and associated processes. With the SAP system in place, among our 2018 and 2019 goals is stabilizing the WAM system and continuing to optimize our processes to take advantage of the new system's capabilities. An important part of this is incorporating technology-related upgrades that respective vendors have developed during the phased WAM deployments, which consists of patching software that was not updated during the multi-year deployment.[4] The

[4] Because WAM was implemented through phased deployments, updating some software prior to completion of the final deployment would have required additional testing that would have added risk to the project cost and timeline.

Company is also refining processes and functionality based on user feedback, as well as supplementing critical reporting necessary to operate our business in the new SAP platform and conducting follow-up training.

Q. HOW LONG WILL THE COMPANY BE ENGAGED IN S&O?

A. This effort began in 2018 and will continue through 2019.

Q. WHAT WILL OCCUR AFTER THE S&O PHASE CONCLUDES IN 2019?

A. After the S&O phase, the PTT initiative will conclude and we will enter Continuous Improvement. From 2020 on, we will continue to complete software patching and upgrades, minor enhancements, and otherwise enhance and improve our systems and processes as necessary to allow us to best run our systems.

III. PTT BENEFITS

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR DIRECT TESTIMONY?

A. In this section of my testimony, I discuss the benefits of the GL and WAM systems and how the benefits are reflected in the Company's cost of service study.

Q. WHAT TYPES OF BENEFITS HAS PUBLIC SERVICE GAINED FROM THE PTT INITIATIVE?

A. The PTT Initiative has created benefits in the areas of work planning and scheduling, crew efficiencies, and procurement. The SAP platform processes require rigor in work planning to ensure the work dependencies are all planned before a work order can be released. The processes also support greater work visibility (to allow work to be bundled by type and geography, thus reducing travel times and improving crew productivity). The scheduling capabilities provide coordinators with a view of future weeks of work, enabling optimum crew routing and material sequencing. The improved planning also helps drive integrated procurement processes by providing longer range material forecasting, which enables leveraging of purchasing contracts.

Q. PLEASE PROVIDE AN OVERVIEW OF THE BENEFITS OF THE GL REPLACEMENT PROJECT.

A. The benefits of the new GL included a simplified chart of accounts structure, better analysis capabilities between accounting results and supporting business

drivers, better traceability from operations and Generally Accepted Accounting Principles ("GAAP") accounting to individual Federal Energy Regulatory Commission ("FERC") accounts, and improved process and workflow functionality to reduce accounting support requirements.

Q. PLEASE PROVIDE AN OVERVIEW OF THE BENEFITS OF THE WAM REPLACEMENT.

A. WAM systems are the standardized business processes and technology used to manage essentially three categories of fundamental utility needs: work crew planning, scheduling and work assignment, work execution and documentation, and procurement optimization. The WAM replacement project: (1) replaced outdated systems to bring critical technologies up to date and improve major functionalities and processes with respect to overseeing utility work planning and scheduling, designing jobs and collecting costs, outage management, vendor contract management, materials procurement and inventory management, and asset maintenance and support; (2) automated scheduling and work assignments; (3) optimized procurement and improved supply chain processes; and (4) improved service, safety, reliability, and overall customer service response.

Q. CAN YOU PROVIDE MORE INFORMATION EXPLAINING WHY A WAM SYSTEM BENEFITS CUSTOMERS?

A. Yes. A work and asset management system provides tools to enable a utility to manage its workforce and infrastructure effectively. WAM can be broadly defined

as the business processes and technology supporting asset management, work management, and materials management.

Utilities are asset-intensive entities and are responsible for managing a large number and variety of electric and gas transmission and distribution systems and power generation facilities. The effectiveness with which utilities manage these assets translates into safer, more reliable, and often quicker service for customers through more efficient crew scheduling and material delivery to service sites.

Q. PLEASE DESCRIBE HOW THE NEW WAM SYSTEM BETTER ENABLES SCHEDULING AND WORK ASSIGNMENT.

A. The new WAM system is the basic foundation through which we manage planning, scheduling, and work assignments. Under the previous system, we managed planning, scheduling, and work assignments to field crews through a relatively manual process. This carried a number of inefficiencies and risks. For example, we were not able to monitor work progress on a real-time basis and therefore could not readily fill gaps in work through electronic dispatching. Crews had to call their supervisor or planner to let them know they were finishing early and needed additional work assignments. In addition, the Company had little ability to optimize a crew's performance through route selection.

Accordingly, the move from semi-manual to fully automated and centralized scheduling through updated technology enabled better coordination of job site readiness before crew dispatch. Employees now have better planning

tools to ensure that material is available and properly staged, planning time to create and attach permits to jobs has been reduced, and there is better coordination of ancillary resources to ensure all job pre-requisites have been completed before work crews arrive at the job site. As a result, supervisors are able to spend more time in the field, and coordination between work groups on outages is improved due to better coordination of jobs through real time communication.

More specifically, with the improved WAM processes and system, managers are more efficient in planning job timing. By using better technology to optimize scheduling, we create more "wrench time" (the percentage of a worker's day devoted to actual project-based work) in the field. Schedules are maintained in one common system based on the type of work and are optimized to minimize drive time, allowing for more jobs per day per crew. Mobility devices have enabled the monitoring of work progress in real-time, allowing additional work to be scheduled through electronic dispatching if crews finish early. Each of these improvements in job management has improved the work of our crews, the availability and use of materials, and the efficiency of jobs for the benefit of our customers.

Q. PLEASE PROVIDE AN EXAMPLE OF THE PREVIOUS SEMI-MANUAL PROCESS.

A. For example, previously, if a work crew was working on an outage in the field and identified unexpected material was needed, they had to contact someone back in

the office, who made the changes to blueprints and work orders. The changes then had to be sent back to the field crew. With the new technology and mobile devices, work crews have access to material and technical information at the work site and can electronically request changes as needed to the current work plan. Further, integration with the Geographical Information System (the system for managing spatial and geographical data) allows field access to electronic work packets, annotations, and red-line drawings.

Another example is where an electric distribution crew's daily planned activities change due to unforeseen circumstances. Previously, coordinators and schedulers could not identify all available work in one system. Now, with the WAM replacement, all work resides in one system—enabling the expeditious identification of the highest priority work a crew is skilled to perform, and rerouting the remaining work to minimize travel time.

Q. PLEASE DESCRIBE HOW THE NEW WAM SYSTEM SUPPORTS "PROCUREMENT OPTIMIZATION".

A. With the new WAM system, we can better manage how and when we procure materials and inventory from vendors, allowing us to better manage inventory and get materials to workers and job sites in a more timely fashion.

Previously, we managed the procurement process across three different systems, making it more difficult to coordinate and aggregate purchases. With the WAM system, these three systems have been replaced and we are able to

conduct more purchase transactions electronically than were possible previously, streamlining the purchasing process.

The new WAM system has also helped us optimize procurement efforts by operating as an integrated solution across business areas that enables automatic re-ordering of materials when inventory starts to run low, and enables more accurate forecasting of total Xcel Energy resource needs in order to lock in long-term contracts with more favorable pricing. In conjunction with implementation of the WAM system, we have also improved supply chain processes in the following ways:

- Pre-qualify suppliers for commonly used goods and services. The goods and services can then be provided under long term contracts, benefiting all Xcel Energy operating companies through centralized management.

- Improve material order processes to obtain materials more efficiently and on an enterprise-wide basis because the WAM system will know which suppliers provide that good or service and route the order accordingly.

- Improve overall supplier invoice accuracy to ensure amounts negotiated are invoiced by having the system verify pricing accuracy, reducing any manual intervention that may be required today.

- Improve invoice processing efficiencies to better take advantage of prompt payment discounts.

Q. HOW DO THE ABOVE FACTORS BENEFIT THE COMPANY'S CUSTOMERS?

A. By using WAM systems to more efficiently maintain Company assets and deploy the Company’s workforce, the Company is utilizing integrated and standardized processes to improve service, safety, reliability, and overall customer service response.

Q. WHAT OPERATIONAL EFFICIENCIES WILL HELP CONTAIN LONG-TERM BUDGETARY GROWTH?

A. Some examples of these operational efficiencies include:

- Condition-based maintenance, which uses equipment performance history, and analysis of previous maintenance performed to predict when future maintenance will be required. For example, a pump can be monitored for performance and indication of wear such as vibration, allowing maintenance to be scheduled when threshold conditions are met. This also applies to motors, valves, turbines, generators, and many other types of equipment.

- Optimized investment in assets from having all equipment in one integrated solution allows the sharing of knowledge and experience systematically throughout the Company. For example, many types of circuit breakers used in our electric distribution function are used in fossil and nuclear generation as well. Problems or issues with various types of circuit breakers can be accessed across the company, and this information will allow for better decisions in asset purchases and maintenance requirements. We have found benefits in utilizing this knowledge starting with documentation of standardized, efficient processes across teams, and our WAM program can help to further these efforts.

Q. TO WHAT EXTENT HAS THE COMPANY ACHIEVED ITS ANTICIPATED BENEFITS ASSOCIATED WITH THE PTT INITIATIVE?

A. While it is not possible to track and quantify all benefits associated with the PTT initiative, in an effort to illustrate the costs and benefits of the PTT Initiative, I am providing Attachment DCB-2. This attachment estimates the net present value of the GL and WAM replacement and the associated benefit-cost ratio, presented at the Xcel Energy level since the GL and WAM were implemented as Xcel Energy-wide projects. As shown in the attachment, the O&M benefits of the GL and WAM exceed total Xcel Energy costs. This summary of O&M benefits focuses

on GL and WAM benefits in isolation from any other events, investments, redeployments of resources, or changes that may affect or offset the level of savings or cost avoidance achieved across the Company. The business and our broader resource needs are, of course, evolving and being impacted by outside events all the time. The use of these new systems facilitates a number of business process changes designed to drive efficiency and improve operational productivity through standardization.

Additionally, the Company has been tracking various performance metrics that demonstrate system and customer benefits have been realized since implementing the PTT initiative. For instance:

- The amount of on-site "wrench time" for a crew in a given period has improved;
- The percentage of work order operations that were completed by the planned due date has improved; and
- Tracking related to the utilization of mobile devices by field crew personnel has improved.

These metrics are meaningful to customer service, and we continue to believe they will provide benefits in the form of both reduced risk and increased productivity.

Q. HOW ARE THESE BENEFITS REFLECTED IN THE COMPANY'S COST OF SERVICE STUDY PRESENTED IN THIS RATE REVIEW?

A. Given that the new GL and WAM were fully implemented prior to the beginning of the 2018 HTY, the savings and efficiencies gained through the PTT initiative are included and reflected in each Business Area's operating expenses.

Q. WHAT DO YOU CONCLUDE WITH RESPECT TO THE COMPANY'S COSTS AND BENEFITS OF THE GL AND WAM?

A. The Company undertook a thorough process for assessing the GL and WAM options prior to and during implementation. The GL and WAM deployments were completed on time and within forecast. Overall, I conclude that the Company used robust and reasonable business judgment to plan for and implement the replacement of aging systems with the integrated GL and WAM solution—in keeping with the Commission's previous determinations of prudence.[5]

[5] Proceeding No. 17AL-0363G, Decision No. R18-0318-I, ¶ 144 (mailed May 11, 2018); Proceeding No. 17AL-0363G, Decision No. C18-0736-I, ¶¶ 119-122 (mailed Aug. 29, 2018).

IV. PRIOR COMMISSION TREATMENT OF PTT COSTS

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my testimony, I discuss the Commission's prior treatment of Public Service's PTT costs. Specifically, I explain that in the Company's recent 2017 Gas Rate Case, the Commission found the costs associated with the GL and WAM systems to be reasonable and prudent.

Q. HAS THE COMMISSION EVALUATED THE COMPANY'S PTT INITIATIVE IN PAST RATE CASES?

A. Yes. Most recently, in the Company's 2017 Gas Phase I, the Administrative Law Judge ("ALJ") determined that the Company had "provided sufficient information to establish that the costs of the GL and WAM systems were prudently incurred," and that "costs associated with the WAM system, which was put into service during 2017, are known and measurable and thus shall be added to the 2016 HTY as a *pro forma* adjustment."[6] The Commission subsequently upheld the ALJ's determination that the "costs of the Work and Asset Management (WAM) system were prudently incurred," while also decreasing the ALJ's proposed O&M offset by a total of $2.4 million in keeping with evidence presented by the Company.[7]

[6] Proceeding No. 17AL-0363G, Decision No. R18-0318-I, ¶ 144 (mailed date May 11, 2018).
[7] Proceeding No. 17AL-0363G, Decision No. C18-0736-I, ¶¶ 119-122 (mailed date Aug. 29, 2018).

Q. IS THE COMPANY SEEKING A SIMILAR FINDING AS THE 2017 GAS RATE CASE HERE?

A. Yes. The Company is requesting the Commission similarly find in this electric rate review that the PTT implementation costs (capital and O&M) the Company has incurred for the PTT initiative, as included in the 2018 HTY cost of service, are reasonable. The Company also requests the Commission find that the capital and O&M costs associated with the S&O phase of its PTT initiative, as included in its 2018 HTY cost of service, are reasonable and prudent. The Company is also asking that the Commission find that the capital costs the Company will incur in 2019 are reasonable and should be included in base rates.

V. PTT CAPITAL COSTS

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my Direct Testimony, I present Public Service's PTT capital additions for 2014 through 2019 that are included in the Company's 2018 HTY cost of service that is presented by Ms. Blair. Attachment DCB-3 and Attachment DCB-4 reflect these 2014–2018 Plant Additions and 2019 Plant Additions, respectively.

Q. WHAT ARE THE CAPITAL COSTS FOR THE PTT INITIATIVE INCLUDED IN THE COMPANY'S 2018 HTY?

A. Table DCB-D-1 below identifies total GL and WAM implementation capital additions placed in service since the 2013 HTY through 2018 (Total Company), along with those forecasted to be placed into service in 2019 (Total Company):

Table DCB-D-1:
PTT Implementation – Capital Additions (Total Company)
($ in millions)

	2014	2015	2016	2017	2018	2019
PTT Initiative – GL/WAM Implementation	0.0	22.1	14.6	112.0	.5	0.1
Total Public Service*	**0.0**	**22.1**	**14.6**	**112.0**	**.5**	**0.1**
*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.						

Table DCB-D-2 below provides a breakdown of the S&O capital additions placed in service in 2018, along with those forecasted to be placed into service in 2019, and which are included in the Company's 2018 HTY.

Table DCB-D-2:
S&O Capital Additions (Total Company)
(in $ millions)

	2018	2019
PTT Initiative – S&O**	5.7	10.6

**In Attachment DCB-3, Customer Mgmt PSCO reflects S&O capital costs; in Attachment DCB-4, the following projects reflect S&O capital costs: SAP Financial Mgmt PSCO, Customer Mgmt PSCO, SAP S&O SW Rel 19 PSCO-10733

The figures in Table DCB-D-1 and DCB-D-2 are stated on a Total Company (Public Service) basis, meaning that they include both electric utility-specific projects and common electric/gas projects stated at the total Public Service level.

Q. PLEASE DESCRIBE THE TYPES OF CAPITAL EXPENDITURES INCURRED FOR PTT IMPLEMENTATION FROM 2014–2019.

A. Capital expenditures for PTT included labor (both internal and external labor), software, hardware, and employee expenses.

- Internal and Contract Labor: Internal and contract labor were incurred across the various phases of the GL and WAM projects, which included professionals with a wide variety of roles and skill sets necessary to perform the functions of design, build, test, and deploy. This includes work by employees of Xcel Energy, Accenture, IBM, and other vendors, including program leads; project managers and leads; enterprise data, technical, functional and solution architects; technical, functional and security designers; configurators; developers; deployment, change management, finance and controls, PMO staff, performance and business analysts; and trainers.

- Hardware: Included the infrastructure needed to implement PTT, including primarily servers, network build-outs, and other computing equipment including mobile devices to facilitate crew efforts.

- Software: Included licensing for new software, primarily for SAP as well as Click scheduling software.

- Employee Expenses: Expenses incurred by employees when working on the PTT project, including travel and other expenses.

Q. PLEASE PROVIDE THE TYPES OF CAPITAL EXPENDITURES INCURRED FOR PTT S&O IN 2018 AND 2019.

A. The S&O effort has been and continues to be focused on improving end user experience and driving customer satisfaction by providing enhancements in a number of areas including, but not limited to, mobility, scheduling, invoice and materials management, operational and financial reporting and IT system performance. Examples include: (1) efforts to improve efficiency and accuracy in the up-front work order to pay processes including work planning and work management in order to streamline Supply Chain integrations, work execution and on-time end-to-end work order to pay processes; as well as (2) implementing the current vendor versioning of support and enhancement packs upgrades that improve system functionality and stability. The following items comprise the bulk of the S&O related capital expenditures:

- The Application Enhancements initiative will focus on improving end user experience by leveraging technology enhancements and updates to existing Xcel Energy systems. Existing continuous improvement items have been included in individual initiatives wherever possible. This initiative will cover additional continuous improvement items and new items that arise over the course of S&O. Prioritized technology changes are being designed, built, tested, and deployed in an agile

manner (whenever possible) to expedite the availability of improvements throughout the organization.

- End users have identified opportunities to further work execution process automation that will reduce non-value added work, improve user experience, further mobile adoption and increase data quality controls. Most of the process automation ideas come directly from mobile end users or SOX data based requirements. End users have also identified opportunities to further scheduling process automation that will improve the customer and user experience, reduce process waste, improve emergency response and escalated operation capabilities, and further scheduling optimization.

- The financial management reporting initiative will improve the quality and efficiency of reporting and the supporting data to better enable management decision making.

- The Work Order to Pay process stabilization effort will improve efficiency and accuracy in the up-front work order to pay processes including work planning and work management in order to streamline Supply Chain integrations, work execution and on-time end-to-end work order to pay processes. This initiative is implementing people, process, data, and technology solutions identified to drive continuous improvement and a culture of accountability. It is focused on standardizing and refining business processes to drive consistency and includes creating and measuring metrics to ensure process adherence and improve accruals and invoice management operations. The materials management initiative will leverage known process and data pain points to improve work order to pay productivity, material availability, and customer project efficiency. The initiative will refine existing master data and implement new standardized processes to fully realize the capabilities of the new SAP system.

- The operational reporting initiative focuses on the identification, presentation, and analysis of information necessary to drive alignment between company priorities and daily work activities. It focuses on supporting the front line management and supervision in the day to day operation of the business. This is achieved by determining the core management requirements and simplification of the use of operational data for decision making.

Q. HOW HAVE THE CAPITAL EXPENDITURES TO IMPLEMENT PTT COMPARED AGAINST PREVIOUSLY FORECASTED AMOUNTS?

A. As shown in Attachment DCB-5, the actual capital expenditures of implementing PTT were $382.5 million (across Xcel Energy), which is $47.5 million under the previously forecasted amount of $430 million (across Xcel Energy).[8] The S&O costs are separate and distinct from Xcel Energy's $430 million PTT implementation forecast.

Q. WHAT STEPS DID THE COMPANY TAKE TO ENSURE ITS PTT IMPLEMENTATION COSTS WERE REASONABLE?

A. We took several steps. First, the vendor contracts reflected substantial negotiations with our vendors to obtain discounts where possible and ensure appropriate pricing. Second, we worked to ensure proper project scope to tailor the project to our needs, as described above. Third, benchmarking and industry data on cost was utilized. The cost estimates were obtained from six peer utilities with comparable revenues, number of employees, capital expenditures, and jurisdictions who had recently implemented SAP. The cost benchmarking data is set forth in Confidential Attachment DCB-6 to my Direct Testimony. As Confidential Attachment DCB-6 illustrates, the total project spend is in line with past costs of combined GL and WAM implementations, even without incorporating inflation. Based on the information from comparable utilities

[8] Note that Attachment DCB-5 compares the Company's actual versus forecasted capital expenditures rather than capital additions. The difference between PTT implementation capital additions and PTT capital expenditures figures is that capital additions include Allowance for Funds Used During Construction.

implementing similar solutions, the total costs for the GL and WAM are reasonable.

Q. HAS THE COMPANY TAKEN ANY ADDITIONAL STEPS TO ENSURE THAT PTT S&O COSTS ARE EFFECTIVELY MANAGED GOING FORWARD?

A. The PTT governance and management structure in place throughout the PTT deployments has been utilized for the S&O effort as well. Related hardware and software costs were the result of sourcing related activity to ensure cost effective pricing. Associated contract labor costs were based on negotiated rates through sourcing processes.

Q. WHAT HAS THE COMPANY DONE TO MANAGE ITS S&O COSTS?

A. The core program management activities that were utilized for the PTT deployment have also been utilized for the S&O activities and are planned to be continued throughout the Company's 2019 activities.

VI. PTT O&M

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my Direct Testimony, I present the PTT O&M expense included in the 2018 HTY cost of service.

Q. WHAT ARE THE 2018 S&O O&M EXPENSES INCLUDED IN THE 2018 HTY?

A. Public Service's S&O O&M expense included in the 2018 HTY cost of service is $654,000 (Public Service – Electric). Attachment DCB-7 shows the PTT O&M Expenses by Cost Element, and Attachment DCB-8 shows the PTT O&M Expenses by FERC Account.

Q. PLEASE DESCRIBE THE TYPES OF O&M EXPENSES INCLUDED IN THE 2018 HTY.

A. These expenses consist of Xcel Energy labor expenses, Accenture consulting costs, and costs for other third-party vendors and consultants that Xcel Energy engaged to provide assistance throughout the program.

As described above, the PTT program had a large scale and multi-year duration, such that a separate Project Management Office consisting of Xcel Energy employees and Accenture staff was required to oversee project implementation. The Enterprise Transformation Office ("ETO"), recently renamed the Innovation and Transformation Office ("ITO"), continues to be responsible for maintaining project documentation, reviewing, and approving key design decisions and ensuring the project meets all milestones and deliverables. The ITO also is responsible for monitoring and mitigating program risk, planning

and monitoring internal and external staffing levels, and managing internal communication and change management. The ITO consists of Xcel Energy Services employees, some staff augmentation for temporary roles as needed, and Accenture business partners who assist with providing oversight of the project. In addition, Xcel Energy utilized other industry experts to review contracts for this project to ensure we were getting the best contract terms possible without sacrificing quality of the final product.

Q. IS THE $654,000 IN 2018 O&M EXPENSE FOR S&O ACTIVITY REFLECTED IN THE COST OF SERVICE PRESENTED BY MS. BLAIR?

A. Yes.

Q. IS IT YOUR CONCLUSION THAT 2018 O&M EXPENSE INCLUDED IN THE 2018 HTY COST OF SERVICE ARE REASONABLE AND NECESSARY?

A. Yes.

VII. RECOMMENDATIONS AND CONCLUSION

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. In sum, I recommend that as part of approving the cost of service developed by Ms. Blair, the Commission approve the capital additions and 2018 O&M expense for the GL and WAM replacement projects associated with the PTT initiative, in addition to the capital additions and O&M expense associated with the current S&O phase of this initiative, which are included in the cost of service presented in this case, as outlined above.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Statement of Qualifications

Daniel C. Brown

As the Director of PMO, I am responsible for providing program management including managing scope, budget, resources, governance, and status for transformational programs for Xcel Energy.

I earned a Bachelor of Science in Interdisciplinary Engineering from Purdue University in West Lafayette, Indiana in 1989 & a Master's Degree in Business Administration from Columbia University in New York, New York in 1999. I began my career as a Systems Engineer at the IBM Corporation in Chicago, Illinois supporting mainframe computer technology for a large retail customer. I was promoted a number of times throughout my eleven year career with IBM in such areas as networking, global outsourcing, and electronic commerce solutions for banking and finance industry customers. Beginning in 2000 after being recruited to Qwest Communications, I had the opportunity to work in a number of other industries and companies in the telecommunications, software development, and printing industry before joining Xcel Energy Services, Inc., in 2008. In 2008, I was recruited to Xcel Energy Services Inc. to become the Director of Infrastructure managing all Xcel Energy data centers, networking infrastructure, and deskside support across all of Xcel Energy territory. In 2011, I was asked to develop the enterprise network strategy for Xcel Energy in preparation for the deployment of wireless devices across our electric and gas grid. In 2012, I was asked to join the PTT Program and served the program initially in the

planning stages, then sustainment model development, and finally the current position of Program Management.

I currently serve as the Xcel Energy representative on the Department of Energy Climate Resilience Task force and have been on the committee for two years. Our role is to share best practices for managing the impacts of severe weather on the operations of our electric grid.

In addition to my responsibilities at Xcel Energy, I serve the Denver Metropolitan Area Community on several boards including the Colorado Black Chamber of Commerce, Downtown Aurora Visual Arts Board of Directors as Vice-Chairman, Purdue Alumni Board of Directors, and the Denver Kappa Alpha Psi Scholarship Foundation as President. In addition to my board positions in the community, I am also a member of the Association of Blacks in Energy, the National Society of Black Engineers, the National Black MBA Association, Purdue Alumni Club (life member and President's Council), Columbia University Alumni Club (life member), and Kappa Alpha Psi Fraternity, Inc. (life member).

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * * *

RE: IN THE MATTER OF ADVICE NO. 1797-ELECTRIC OF PUBLIC SERVICE COMPANY OF COLORADO TO REVISE ITS COLORADO P.U.C. NO. 8-ELECTRIC TARIFF TO IMPLEMENT RATE CHANGES EFFECTIVE ON THIRTY-DAYS' NOTICE.	)	**PROCEEDING NO. 19AL-_____E**

AFFIDAVIT OF DANIEL C. BROWN
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

I, Daniel C. Brown, being duly sworn, state that the Direct Testimony and attachments were prepared by me or under my supervision, control, and direction; that the Direct Testimony and attachments are true and correct to the best of my information, knowledge and belief; and that I would give the same testimony orally and would present the same attachments if asked under oath.

Dated at Denver, Colorado, this 17th day of May, 2019.

Daniel C. Brown
Program Director, ITO PMO Services

Subscribed and sworn to before me this 17 day of May, 2019.

AMANDA CLARK
Notary Public
State of Colorado
Notary ID # 20164004880
My Commission Expires 02-05-2020

Notary Public

My Commission expires 2/5/20