Direct Testimony and Schedules
Michael O. Remington

Before the Minnesota Public Utilities Commission
State of Minnesota

In the Matter of the Application of Northern States Power Company
for Authority to Increase Rates for Natural Gas Service in Minnesota

Docket No. G002/GR-23-413
Exhibit___(MOR-1)

Technology Services

November 1, 2023

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Schedules

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Michael O. Remington and I currently serve as Technology Services Director, Application Managed Services, for Xcel Energy Services Inc. (XES), the service company affiliate of Northern States Power Company, a Minnesota corporation (NSPM or the Company) and an operating company of Xcel Energy Inc. (Xcel Energy). I have been in my current position since February 1, 2021.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I am responsible for managing Technology Service's relationship with our primary Application Managed Services (AMS) provider, including performance monitoring, demand management, invoice review, and contract management. AMS services include application maintenance, support, and enhancements, as well as participation in project implementation related to current and new applications. I am also responsible for directing and preparing testimony, supporting documents, and discovery responses related to Technology Services in filings before the Minnesota Public Utilities Commission (Commission) as well as for other Xcel Energy operating companies (OpCos).

I have over 25 years of experience in the field of Information Technology (IT), a significant portion of which has been devoted to my tenure at Xcel Energy. After almost eight years at IBM Global Services where I filled IT roles under contract for Xcel Energy, I joined Xcel Energy in July 2008 as a Senior Manager of IT Service Management, where I served continuously for 11 years. My team was responsible for the administration of core IT service management processes

(change, problem, request fulfillment, configuration, and asset management). We also ensured compliance and audit readiness for several North American Electric Reliability Corporation (NERC) regulatory standards and Sarbanes-Oxley Act of 2002 controls. During the period from October 2013 to January 2015, I embarked on an additional endeavor alongside my role as Senior Manager of IT Service Management. This temporary assignment within the General Counsel organization provided a unique opportunity for me to practice law on behalf of Xcel Energy, undertaking transactional work, and overseeing equal employment opportunity and safety investigations. From July 2019 to January 31, 2021, I was Director of IT Operations. In that role, I was responsible for managing major incidents, monitoring Information Technology (IT) infrastructure and applications, disaster recovery planning, and managing several core IT service management processes.

My résumé is attached as Exhibit___(MOR-1), Schedule 1.

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

A. I present and support the Company's capital and operation and maintenance (O&M) budgets during the 2024 test year for the Technology Services area.

Q. PLEASE PROVIDE AN OVERVIEW OF THE TECHNOLOGY SERVICES AREA WITHIN XCEL ENERGY.

A. Technology Services provides IT services across Xcel Energy. Like all utilities, Xcel Energy must invest in computers, software, networks, mobile devices, and other IT services each year in order to (among other things):

- Coordinate work in the field;
- Interact with customers;

- Run our gas system;
- Provide information to our state and federal regulators;
- Purchase gas;
- Bill and collect for services efficiently;
- Develop budgets and track expenditures;
- Manage vendors and vendor contracts; and
- Compensate employees.

Each of these activities is necessary to provide reliable natural gas service and a positive customer experience.

Q. CAN YOU PROVIDE AN OVERVIEW OF THE WORK TECHNOLOGY SERVICES WILL BE PERFORMING DURING THE 2024 TEST YEAR?

A. Yes. Technology Services will continue much of our fundamental IT work, including replacing aging technology; protecting customers and the Company against cyber security risks and attacks; and strategically enhancing our IT capabilities to improve our customer and employee experiences.

This ongoing, fundamental IT work is necessary due to the rapidly changing nature of technology and evolving business needs. With typical asset lives ranging from three to seven years (depending on the system), the average lifespan of IT assets is considerably shorter than it is for assets in many other business areas. With these changes in technology and corresponding changes in customer expectations, we will continue to be flexible and nimble, working within the resources available to us, to address new technologies and needs as they emerge.

Q. PLEASE PROVIDE A SUMMARY OF YOUR TESTIMONY.

A. In my Direct Testimony, I describe the Technology Services organization, as well as some of the IT and business continuity services we provide. I illustrate that our capital and O&M investments in recent years have increased in light of the rising importance of IT in our business, but have also varied year-to-year based upon the needs of the Company and our customers, leading to a lower 2024 test year budget compared to 2023 and 2022. I explain the kinds of investments we are currently making, why they are important to meet our customers' changing energy needs, and how we work to ensure reasonable costs for those investments.

I present our proposed capital additions of approximately $11.1 million for 2024 on an NSPM (State of Minnesota Gas Jurisdiction) basis.[1] I provide support for the key investments we seek to recover in base rates during the test year.

I begin by walking through the major capital projects that comprise these rate case budgets, organizing projects according to the following budget groupings: (1) aging technology, (2) cyber security, (3) customer experience, (4) enhancing capabilities, and (5) emergent demand.

I then discuss the Technology Services O&M budget for 2024, which is increasing modestly compared to prior years. I explain why our O&M budget is reasonable and reflects the types of expenditures we must make to keep the technology side of our business running productively.

[1] All costs for capital additions in my testimony are stated on an NSPM (State of Minnesota Gas Jurisdiction) basis, including gas and common unless otherwise noted. Capital projects that would be only assigned to the State of Minnesota Electric jurisdiction are not included. As discussed in more detail below, Technology Services O&M costs are presented for the NSPM State of Minnesota Gas Jurisdiction.

Q. HOW HAVE YOU ORGANIZED YOUR TESTIMONY?

A. My testimony is organized into the following sections:

- *Section II* – Technology Services Overview
- *Section III* – Capital Investments
- *Section IV* – O&M Budget
- *Section V* – Conclusion

II. TECHNOLOGY SERVICES OVERVIEW

Q. PLEASE DESCRIBE TECHNOLOGY SERVICE'S KEY ROLES AND RESPONSIBILITIES.

A. Technology Services is the Company's centralized IT organization, providing technology services across all operating companies, including NSP-Minnesota. These services include support for the following business operations:

- *Foundational Technology Infrastructure*. Technology Services is responsible for providing support for each employee's hardware and software needs. This includes maintaining and updating the hardware and operating systems used on employee computers and servers, providing network connectivity, and providing sufficient data storage capabilities. Technology Services is also charged with protecting the security of the Company's data from cyber attacks.
- *Systems Controls*. Technology Services provides technology support to our natural gas distribution units to help manage and operate the gas systems. This includes providing and supporting software applications such as Supervisory Control and Data Acquisition (SCADA), which is used to monitor the health of the natural gas distribution systems.
- *Customer Support*. We provide support for infrastructure and software that facilitate interactions with our customers. This includes maintaining the

Customer Resource System (CRS), which is the Company's customer information system of record, which generates approximately 4 million billing statements to Xcel Energy customers on a monthly basis. We also support the Interactive Voice Response (IVR) software that enables interaction with customers via telephone keypad or speech recognition. Technology Services is also responsible for maintaining the technology used for the Company's website that provides valuable information to customers about their accounts and Company operations including outages.

- *Corporate Support*. We provide IT support for necessary corporate functions of the Company such as Human Resources and Financial Management. This includes providing and maintaining software applications that assist in the creation, tracking, reporting, and analysis of budget and forecast information.

Q. HOW DOES TECHNOLOGY SERVICES SUPPORT THE SERVICES OR FUNCTIONS DESCRIBED ABOVE?

A. Along with our day-to-day work to support the IT we have deployed, Technology Services makes capital investments and incurs O&M costs to support other business areas and functions across Xcel Energy. I will discuss our capital investments and O&M trends in more detail below.

Q. WHY IS TECHNOLOGY SERVICES IMPORTANT TO THE COMPANY AND ITS CUSTOMERS?

A. Technology Services provides the technologies and supporting services necessary for system reliability and security, operational decision-making, and improved customer support and business capabilities. Technology is constantly

advancing and evolving as a foundational aspect necessary to help any business meet its goals and objectives. In today's world, no large business can function in a safe and reliable manner, or provide appropriate customer service levels, without IT investments. For example, the IT and Operations Technology (OT) convergence, two traditionally separate systems, merges business insights, controls and processes in a single uniform environment. This convergence allows utilities to reduce errors, improve efficiency, enhance workflows, and manage costs. There is an increasing reliance on data enabled by technology to make informed decisions on equipment status, demand load management, and other critical functions in the utility business. Actionable and accurate data are dependent on system integrations to ensure all relevant factors are considered from multiple information sources. IT is also a critical component of effective customer interactions and managing work and employees – whether from a human resources (HR) or field workflow perspective, and to enable day-to-day functions of the business, such as through the use of laptops, field devices, conference rooms, and other communications equipment.

To operate in an environment where technology is constantly evolving, we must be smart and proactive by identifying and integrating technologies that will both advance our business and protect it from technological attacks. For example, the advancements in two-way communications, intelligent devices, and SCADA necessitate the integration of many systems to ensure effective use of information and enable operational capabilities of new technologies. Identifying new technologies and integrating them into our system supports smarter gas operations, system optimization, a more effective workforce with better-enabled employees, and more informed stakeholders through closer connections with external parties. These developments increase the importance

of technology, and in turn Technology Services, to the Company and each of our stakeholders.

III. CAPITAL INVESTMENTS

A. Overview

1. 2020-2022 Technology Services Capital Additions

Q. WHAT WERE THE DRIVERS OF TECHNOLOGY SERVICES CAPITAL INVESTMENTS OVER THE PAST FEW YEARS, FROM 2020 TO 2022?

A. Over the past few years, as our IT systems age, business and regulatory requirements change, and technologies evolve, the Company continued phased replacements and upgrades to the Company's systems.

Q. WHAT SYSTEM UPGRADES AND REPLACEMENTS DID THE COMPANY UNDERTAKE DURING THE 2020-2022 PERIOD?

A. We have continued to invest in routine maintenance as well as projects to address outstanding business needs, including cyber security, improving communication capabilities, and supporting a safer, more efficient workplace. During this period, we have also significantly enhanced our focus on the customer experience as changing customer expectations are requiring us to work to continuously improve and maximize the performance of the tools serving customers.

In addition, refreshing end of life network infrastructure was (and continues to be) a key driver of increased investment and requires attention on an ongoing basis. Network connectivity is a critical operational foundation required for the Company to provide a safe and reliable product, which, stated simply, is the

extensive process of connecting locations across our Company for transfer of voice and data. The process of refreshing network connectivity devices follows a risk management practice. Failure to replace aging network mechanisms would increase the risk of component level failures resulting in systemic outages across service venues.

Other major investments during this period included projects to enhance the Company's technological capabilities, such as the Digital Operations Factory project, which deployed a centralized data and analytics platform that automates manually intensive tasks, including work identification, prioritization, scheduling and dispatch, enabling improved utilization of operations resources performing maintenance activities. In addition, the Company placed into service the ServiceNow project, which facilitates IT service delivery, asset management, and regulatory compliance, and is intended to lead to higher IT customer service satisfaction by improving the Company's ability to route information more effectively.

Finally, as another example of the kinds of IT assets placed into service during this time period, the Gas Plant SCADA Delta V Replacement capital addition replaced the existing Gas SCADA systems at the Westcott, Sibley, and Maplewood Gas plants as part of the first of two phases in this project. I discuss later in my testimony capital additions implemented under Phase 2 of this project for the 2024 test year.

Q. WHAT WERE THE TECHNOLOGY SERVICES ACTUAL CAPITAL ADDITIONS FOR THE YEARS 2020-2022?

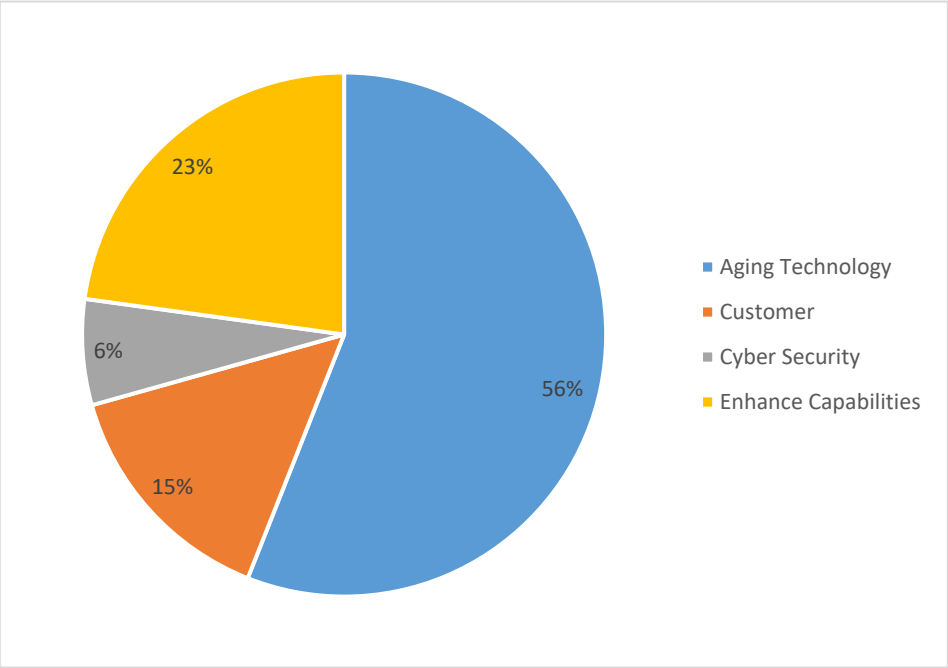
A. The 2020-2022 capital investments that the Company made are provided below in Table 1 and Figure 1.

Table 1
2020-2022 Capital Additions
(Dollars in Millions)

NSPM Capital Category	**2020 Actual**	**2021 Actual**	**2022 Actual**
Aging Technology	$3.4	$3.7	$15.0
Customer	1.5	0.3	4.0
Cyber Security	0.8	0.4	1.4
Enhance Capabilities	0.3	2.8	6.0
Total	**$5.9**	**$7.1**	**$26.5**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

Figure 1
2020-2022 NSPM Capital Additions



Q. CAN YOU EXPLAIN WHY THE AMOUNTS OF INVESTMENT IN THESE CAPITAL BUDGET GROUPINGS HAVE INCREASED OVER THESE THREE YEARS?

A. Yes. There is no doubt that over time, the need for capital investment is increasing in order to effectively manage our business. As I previously discussed, the IT and OT convergence allows utilities like the Company to reduce errors, improve efficiency, enhance workflows, and manage costs, but the Company is also increasingly relying on data enabled by technology, which helps the Company make informed decisions about critical functions. In turn, such investments drive O&M increases, which include new licensing and maintenance agreements to support the technology and are more costly due to rising inflation. Since our needs vary year to year depending on the needs of the technology systems, we can evaluate each year individually. In 2020, while our needs focused on aging technologies, upgrading our cyber security capabilities,

and enhancing the Company's capabilities, we also continued significant investments in the customer experience area, which started in 2019, and which I will discuss in more detail later in my testimony. In 2021, aging technology took a front seat followed by enhancing the Company's capabilities. In 2022, more than half of our closings were related to aging technologies, most notably with our Gas Plant SCADA Replacement work, life cycle management projects (routine refreshes), and VoIP Refresh. In addition, we also continued with investments to improve the customer experience in 2022.

Q. LOOKING AT THIS HISTORY, WHAT DO YOU CONCLUDE?

A. Technology Service's prior capital investments have supported the technologies needed to provide gas service to our customers. Without ongoing investment in technologies, we would lack the tools to operate reliably and securely, support functional decision-making, enable communications and "smart" resources, and protect such fundamentally important resources as our gas operations, our customer information, and our financial data.

Q. MOVING FORWARD, CAN YOU ADDRESS TECHNOLOGY SERVICE'S CAPITAL WORK IN 2023 SO FAR?

A. Yes. We have continued to invest in routine replacements as well as projects to address outstanding business needs. In 2023, the Company is focused on aging technology. Most notably, the Core HR Application project is continuing to move forward, focusing on the replacement of legacy timekeeping, benefits, and payroll systems that have been out of support for several years with more modern applications, including Workday. In addition, the Technology Licenses project continues, focusing on our Microsoft contract renewals that are required in 2023.

2. Overview of the 2024 Test Year

Q. WHAT IS THE COMPANY'S CAPITAL ADDITION FORECAST FOR THE 2024 TEST YEAR BY CAPITAL BUDGET GROUPING?

A. Our capital addition forecast by budget grouping for 2024 is set forth in Table 2 and Figure 2, below. Individual project capital investment additions are also listed in Exhibit___(MOR-1), Schedule 2.[2]

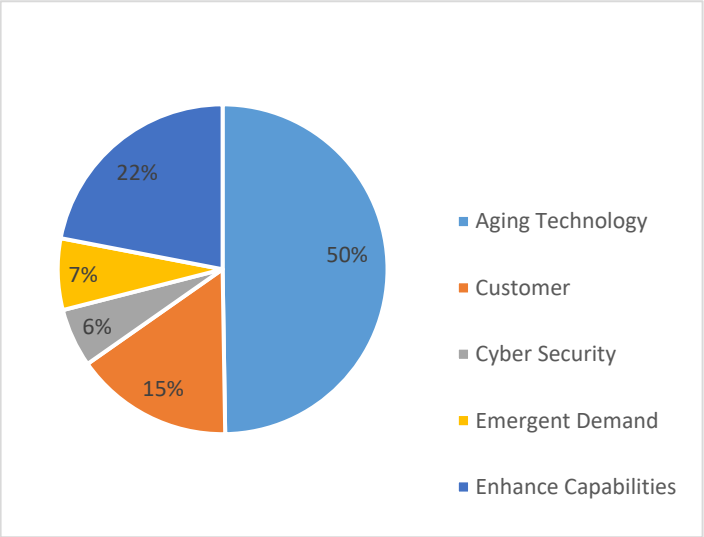
Table 2
2024 Capital Additions
(Dollars in Millions)

NSPM	**2024**
Category	**Test Year**
Aging Technology	$5.5
Customer	1.7
Cyber Security	0.6
Emergent Demand	0.8
Enhance Capabilities	2.4
Total	**$11.1**

*There may be differences between the sum of the individual category amounts and total amounts due to rounding.

[2] In some cases, rounding may result in a slight variation between some tables and Exhibit___(MOR-1), Schedule 2.

Figure 2
2024 NSPM Capital Additions



Q. WHAT KEY PROJECT AREAS WILL THE COMPANY INVEST IN DURING THE 2024 TEST YEAR?

A. Our aging network infrastructure continues to be a key driver of increased investment and requires attention on an ongoing basis, which as I previously indicated is a critical operational foundation required for the Company to provide a safe and reliable product. In addition, we continue to seek out areas that will enhance the Company's capabilities to provide service to our customers, such as through our Private LTE project, and by improving customer experiences in their interactions with the Company through continued implementation of components that build on our foundational customer experience investments. We also continue to focus on our addressing cyber security risks the Company faces. I will discuss these efforts in more detail later in my testimony.

Q. CAN YOU PROVIDE AN OVERALL PICTURE OF YOUR CAPITAL ADDITIONS AND CAPITAL EXPENDITURES TRENDS FROM 2020 THROUGH THE END OF THE TEST YEAR (2024)?

A. Yes. Our overall 2020 through 2024 capital additions and capital expenditures are set forth in Tables 3 and 4 below.

Table 3
2020-2024 Capital Additions
(Dollars in Millions)

NSPM Category	2020 Actual	2021 Actual	2022 Actual	2023 Forecast	2024 Test Year
Aging Technology	$3.4	$3.7	$15.0	$13.3	$5.5
Cyber Security	0.8	0.4	1.4	2.7	0.6
Enhance Capabilities	0.3	2.8	6.0	7.1	2.4
Customer	1.5	0.3	4.0	2.4	1.7
Emergent Demand	-	-	-	0.02	0.8
Total	**$5.9**	**$7.1**	**$26.5**	**$25.5**	**$11.1**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

Table 4
2020-2024 Capital Expenditures
(Dollars in Millions)

NSPM Category	2020 Actual	2021 Actual	2022 Actual	2023 Forecast	2024 Test Year
Aging Technology	$4.9	$7.8	$10.3	$13.0	$4.0
Customer	1.7	2.2	1.3	1.4	3.1
Cyber Security	0.7	1.1	1.4	1.9	0.4
Emergent Demand	-	-	-	0.07	1.6
Enhance Capabilities	1.3	3.0	6.3	6.7	4.0
Total	**$8.7**	**$14.0**	**$19.3**	**$23.1**	**$13.0**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

Tables 3 and 4 illustrate that Company investments in IT vary depending on the specific work that is necessary for our business and our customers in a specific year. In the years when less investment is needed, we budget accordingly, and Company resources are used where they may be required in other business areas. Conversely, Technology Services capital expenditure levels necessarily increase in years when we are embarking on significant initiatives, and capital additions necessarily increase when those initiatives are placed in service.

Q. WHY DO CAPITAL ADDITIONS TOTALS DIFFER FROM CAPITAL EXPENDITURE TOTALS?

A. While the capital addition trend is affected by our capital expenditures, the capital additions (plant in service) trend may not mirror the capital expenditure (spend) trend and may fluctuate more depending on the length of time individual projects require to complete. The capital expenditure trend reflects the progress of the project through the months, whereas the capital addition trend reflects the total at the conclusion of the construction or implementation

process when the asset is placed in service. Company witness Allison M. Johnson addresses how the Company's overall capital additions align with budgeted capital additions in any given year.

Q. WHAT MAJOR CAPITAL PROJECTS ARE DRIVING THE COMPANY'S 2024 TEST YEAR REQUEST?

A. As shown Table 5 below, we anticipate undertaking four major capital projects in 2024. These capital additions include:

Table 5
2024 Major Capital Projects
(Dollars in Millions)

NSPM Project	2024 Test Year
Private LTE	$1.9
Customer Experience Transformation Phase 3	1.7
Gas Transaction System (GTS) - Measurement	1.5
Gas Plant SCADA Replacement	1.3
Total	**$6.3**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

I describe these projects in more detail in Section III.D of my Direct Testimony.

Q. WHAT DO YOU CONCLUDE ABOUT TECHNOLOGY SERVICE'S 2024 CAPITAL INVESTMENT FORECAST?

A. I conclude that our capital forecast represents an accurate, reasonable, and representative picture of our IT investments. History demonstrates that the Company will make the investments necessary to serve customers safely and

reliably. Technology Services capital additions are necessary to maintain stability and reliability of the IT systems used by employees to serve Minnesota customers, efficiently manage business operations, protect Company data and information, and meet evolving regulatory and legal requirements. Overall, they support important investment strategies that focus on the key IT needs of the Company and our customers while balancing the need for overall cost containment and prioritization. Therefore, the 2024 forecast can be relied on to set just and reasonable rates for our customers.

3. Challenges Facing the IT Business Area

Q. ARE THERE CHALLENGES UNIQUE TO TECHNOLOGY SERVICES THAT CAN AFFECT THE COMPANY'S BUDGETING AND ACTUAL EXPENDITURES?

A. Yes. Technology changes constantly. As a result, issues with older software or equipment may not seem critical during budget creation but become critical if systems begin to show signs of issues or failure, or no longer serve their intended purpose. Additionally, cyber security threats are constantly in flux and may require additional investment in a given year to ensure that cyber security tools and resources are responsive to new threats to our information systems. As IT has become increasingly critical to the business, the demand for new or enhanced IT solutions far outpaces the dollars available to meet those requests. As a result, it is necessary to constantly monitor, and sometimes re-prioritize, the percent of total dollars invested in each capital budget grouping.

Q. WILL TECHNOLOGY SERVICES STILL MANAGE ITS OVERALL CAPITAL INVESTMENTS TO ITS OVERALL BUDGET?

A. Yes, it will. Our overall budget supports our investments in technologies and supporting services as necessary to ensure system reliability and security, to

facilitate operational decision-making, and to provide the necessary levels of support to our customer support and business capability functions. Technology Services is expected to manage its capital additions to its capital budget once that budget has been developed, fully vetted, and approved, as I discuss in Section III.C.

B. Technology Services Investment Needs

Q. WHAT ISSUES ARE DRIVING TECHNOLOGY SERVICE'S STRATEGIC CAPITAL PLANNING?

A. As I discussed above, the five key areas driving IT investment for the gas business and ultimately capital additions in the 2024 test year are: (1) replacing aging technology; (2) addressing evolving cyber security threats and requirements; (3) enhancing capabilities; (4) enhancing the customer experience; and (5) addressing emergent demands. I discuss each of these areas below, explaining why they are important to conduct our business and serve customers. I will also explain how we are addressing emergent demands in the next section, Project Budgeting and Governance.

1. Aging Technology

Q. WHAT ARE THE PRIMARY ISSUES FACING THE COMPANY WITH REGARD TO AGING TECHNOLOGY?

A. Technology Services supports the operations of the Company with a large and growing IT infrastructure. Information assets are no different from physical assets, although IT assets have generally shorter lives, as I previously mentioned. They are subject to aging, technological obsolescence, and increasing maintenance costs. Technology Services not only completes routine annual refreshes of technology (or what we also call life cycle management projects,

typically completed on regular cycles), like replacing computers and printers or refreshes of other smaller components, but also plans and places in service large IT projects that modernize the Company's IT and address the needs and experiences of our customers and employees. A reasonably up-to-date infrastructure is necessary for the Company to continue to meet increasingly demanding data security, reliability, and compliance requirements, as well as the service expectations of our customers. For example, some aging technologies are not equipped with the most current data security measures, meaning they are more vulnerable to cyberattack. In addition, the recovery of aging technologies after an outage can be compromised if those systems are no longer supported by their vendor.

Q. HOW DOES THE COMPANY DETERMINE WHEN EXISTING IT NEEDS TO BE REPLACED?

A. Technology Services strives to maximize our technology investments by maintaining existing software and hardware until the risk and costs associated with keeping these aging technologies in place require attention. For instance, new software systems are often necessary when the existing software is no longer supported by the vendor, which may lead to reliability issues (e.g. system failures or cyber security vulnerabilities) due to the vendor no longer providing security upgrades or patches, or when the age of a system results in it no longer being compatible with other systems, which in turn may impact business operations.

2. Cyber Security

Q. PLEASE SUMMARIZE THE CYBER SECURITY ISSUES FACING THE COMPANY.

A. Investments in cyber security ensure the availability, integrity, and

confidentiality of our IT systems, as well as compliance with legal and regulatory obligations. These investments provide prevention, detection, containment, and repair services to protect the Company from cyberattacks and to assist in recovery if such an attack occurs. A good example of the types of cyber security projects that we have implemented is the Multi-factor Authentication project, which deployed a multi-method, multi-level process for the authentication of individuals who attempt to access Xcel Energy's network, as well as ensuring that the device used is compliant from a security perspective.

Cyber security does not, however, generally include physical security investments, such as property security. Physical security is part of Shared Corporate Services and is discussed by Company witness Christopher R. Haworth.

Q. WHAT IS TECHNOLOGY SERVICES DOING TO ADDRESS THOSE CYBER SECURITY ISSUES?

A. The Company has taken great strides to address cyber security issues. In particular, Xcel Energy has a dedicated Enterprise Security and Emergency Management (ESEM) business area. The purpose of the ESEM is to enable the Company's vision, mission, and goals by proactively leading efforts to identify, protect, detect, and respond to all-hazard threats and events. The ESEM oversees all aspects of security, which includes: cyber, physical, and personnel; investigations and digital forensics; threat management; privacy (customer and employee); and enterprise emergency management. There are multiple ways that the ESEM addresses new threats and solutions to cyber security issues.

First, ESEM exists to manage our overall cyber security posture, implement processes and plans to be able to quickly mitigate any adverse events, respond appropriately and effectively to large scale events that would otherwise cause significant harm to natural gas delivery systems, and ensure regulatory compliance.

Second, to meet the needs and demands of today's security requirements, Technology Services has implemented multiple security systems and technologies. We have implemented technologies to date that include: Vulnerability Management; Advanced Threat Protection; Security Forensic Tools; Advanced Firewalls Intrusion Prevention Devices; and a Security Incident and Event Management system to correlate all the data and bring visibility to what is happening on our infrastructure.

Third, we have enhanced our partnerships with both state and federal agencies, in addition to industry associations, in order to ensure that we are tapped into the stream of information available regarding impending threats and attacks. These associations and agencies include Edison Electric Institute, National Infrastructure Advisory Council, American Gas Association, the Federal Bureau of Investigation, and the U.S. Department of Homeland Security.

Finally, our disaster recovery team works with application support teams to validate their disaster recovery plans on an annual basis. We have also implemented an isolated infrastructure and computing platform to enable thorough testing of recovery plans for certain critical applications, such as those running on the SAP platform, to ensure full recoverability. This work protects our assets and our customers, but requires continuing vigilance.

3. Enhancing Capabilities

Q. HOW DOES TECHNOLOGY SERVICES ASSIST IN ENHANCING CAPABILITIES FOR THE COMPANY?

A. Technology can offer the opportunity to improve productivity, enhance communications between systems and between people, and use data more efficiently. Technology Services is constantly evaluating new technologies and helping business areas examine ways to increase efficiencies and enhance communications between systems that benefit the Company and our customers. An example of an enhancing capabilities project is the Strategic Fiber Deployment Project, where the Company will acquire fiber optic cable assets in order to better support enterprise network connectivity.

Q. HOW DOES TECHNOLOGY SERVICES DETERMINE WHICH CAPABILITY-ENHANCING TECHNOLOGIES TO IMPLEMENT?

A. Technology Services partners with business area stakeholders to identify and implement technologies that are intended to contribute to improved safety, increased efficiencies, employee and customer satisfaction or other improvements. Technology Services works prudently with various business units to evaluate new technologies to determine whether they can be used to improve efficiency in the way tasks are completed, data is used, or in the way communications are conducted within the organization and with external stakeholders, including our customers.

4. Customer Experience

Q. WHAT IS TECHNOLOGY SERVICES REFERRING TO WHEN IT DISCUSSES A "CUSTOMER EXPERIENCE"?

A. The customer experience refers to the Xcel Energy customer's direct interactions with the Company, whether by digital platforms, through the call center, or in person. Managing the experience requires both system tools and customer interfaces that work for the customer, supporting their satisfaction with their service and overall experience with the Company.

Q. PLEASE DESCRIBE EFFORTS BY THE COMPANY TO ENHANCE THE CUSTOMER EXPERIENCE THROUGH IT.

A. While all of Technology Services' work puts the customer front and center, prior to 2019 it had been several years since we had invested significantly in primary customer touch points and relationship management tools. In support of the enterprise focus on enhancing customer experience, Xcel Energy launched a specific Customer Experience Transformation (CXT) program in 2019 to help create smarter and simpler experiences for employees and customers and created a new category called customer enhancements. This multi-year effort is designed to simplify Company technology, transform customer experiences, improve customer satisfaction and employee engagement, and continue to drive more efficient operations. CXT is designed to work strategically on enhancing digital channels, developing a data fabric model and migrating customer and business data into the model, and deploying the foundational components to allow the first two to operate. More specifically, Xcel Energy is utilizing more modern technologies that customers have come to expect through experiences with other companies. This includes

interactive websites, account management options, and smart phone applications.

As more modern technologies become available for customers, it will be necessary to continue to invest in new capabilities like mobility, data and analytics, and customer relationship management. Front line employees' innovative thinking is being used to align with our customers' needs and expectations.

Q. MORE SPECIFICALLY, WHAT IS THE CXT PROGRAM?

A. CXT is a program developed to work strategically on enhancing our digital channels, developing a data fabric model and migrating our customer and business data into the model, and designing, building, testing, and deploying the foundational components to allow the first two to operate. More specifically, we are utilizing more modern technologies that our customers have come to expect through experiences with other companies. This includes interactive websites, account management options, and smart phone applications. The initial CXT program is a series of foundational investments in platform infrastructure and data analytics and automation that are intended to improve the Company's digital interfaces with customers. Recognizing that additional work will likely be needed and that customers will need to acclimate to changed interfaces with the Company, initial work and investments to improve the customer experience were divided into certain project areas: (1) Digital Channel Platforms (including MyAccount, the Company's website, Xcel Energy mobile applications, and new customers and real estate developers' initial connections with the Company (Customer Connect)); (2) the Customer Relationship

Management (CRM) Platform (currently Salesforce); (3) Platform Infrastructure and Technology Maintenance; and (4) Data Analytics and Automation.

Q. WHAT PROGRESS HAS THE COMPANY MADE ON THIS INITIATIVE TO DATE?

A. We approached this program in phases, with initial deployments implemented in 2020 and which continued throughout 2021 into 2022. Xcel Energy has now deployed the technology foundation on which new experiences are being built, including services like new customer connections and our service channels. While most of this foundational work was completed by 2021, CXT program work will continue, with additional components being placed in service in the 2024 test year and in the future to build on the foundational work and continue to enhance customer experiences. I discuss these investments further in Section III.D.4.

C. Project Budgeting and Governance

1. Methodology for Establishing a Reasonable Overall Budget

Q. HOW DOES THE TECHNOLOGY SERVICES AREA ESTABLISH A REASONABLE CAPITAL BUDGET FOR A GIVEN YEAR?

A. The appropriate annual capital budget for Technology Services is based on a partnership between corporate management of overall finances and the business needs we identify. Company witness Haworth explains how the Company establishes overall business area capital spending guidelines and budgets based on financing availability, specific needs of business areas, and overall needs of the Company.

The Technology Services area itself employs a "bottom-up" approach to planning for the needs our business area addresses. Technology Services will

continue to use a portfolio prioritization and balancing process to determine the needs we must address and decide how to allocate limited funds according to the highest business priorities, including the greatest demands our IT systems face in each year. The portfolio is regularly prioritized and balanced to support established strategic objectives using predefined portfolio management criteria, the organization's desired risk profile, portfolio performance metrics, and capacity constraints. These projects are then rolled up to total budgeted costs by capital budget groupings. Often the desired initial budget exceeds the spending guidelines, which then requires review meetings with managers, directors, and vice presidents to assess the requested budget and determine the right course of action.

Because this happens throughout the Company, a higher or lower percentage of the Company's overall resources may be allocated to Technology Services in any given year, depending on the priority of needs throughout the Company. Ultimately, corporate leadership determines the amount of money to be allocated to Technology Services for each year, as part of the total budget development for the Company.

Q. HOW DOES TECHNOLOGY SERVICES MANAGE ITS BUDGETED PROJECTS TO THE OVERALL CAPITAL BUDGET ALLOTTED TO IT?

A. Once the Technology Services allotment is known, Technology Services uses the Technology Investment Governance (TIG) process to evaluate all proposed Technology Services investments. The TIG process is the Company's IT budget development, project prioritization, and project oversight process, which helps to establish budgets that are reasonable and to manage our capital expenditures accordingly. The TIG process helps ensure Company budgets are reasonably

reflective of the projects that will be placed in service during the relevant year or years.

As part of the TIG process, key business and IT leaders are accountable for managing demand intake, prioritization, and business outcomes of the IT projects in their portfolios as they move from project inception towards in-service, thereby ensuring that projects comply with IT portfolio and project management requirements. TIG leadership is comprised of business area and IT senior leaders. Projects are reviewed so that scope and costs are managed from inception through implementation. Company leadership has final approval for either maintaining the portfolio "as is" or adjusting the portfolio within the established budget thresholds. The purpose is to determine whether the projects included in the budget are sound, viable, and worthy of funding, support, and inclusion in the Company's IT portfolio. The process of adjusting the portfolio may include:

- adding new projects that have been selected and prioritized for inclusion in the budget;
- identifying projects that are not authorized based on the review process; or
- identifying any projects to be suspended, reprioritized, or terminated based on the review process.

The TIG process and its "Gated" approval procedures are presented in more detail in Exhibit___(MOR-1), Schedule 3.

2. Changes in Planned Projects

Q. AS A PROJECT MOVES THROUGH DEVELOPMENT, DOES TECHNOLOGY SERVICES TAKE STEPS TO MONITOR VARIANCES BETWEEN ITS ACTUAL EXPENDITURES AND ITS BUDGET?

A. Yes. After cost estimates are developed, all projects follow the TIG process, requiring reviews and approvals of the budget by Business Portfolio Owners, while the portfolio level budgets are approved at the senior leader and executive levels. After these approvals, project capital and O&M are reviewed monthly to compare budget to actual expenditures. Technology Services and the TIG leaders evaluate deviations to determine whether costs are appropriate. In addition, Technology Services develops action plans to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay expenditures to support the overall authorized budget. If authorized budget adjustments are required, they are identified and approved through the TIG process.

Q. DOES TECHNOLOGY SERVICES ALSO ENCOUNTER TIMES WHEN IT MUST CHANGE PROJECT PLANS?

A. Yes. For some projects, the complex nature of the project implementation and long lead times mean we must plan for the project and carry it out over a long period of time. In these situations, we may need to adjust project cost expectations, timelines, or scope as the details and design of the project become more certain over time.

Other projects may have shorter lead times, a lower priority, or other reason why they are important but could be delayed if a higher priority comes to light. However, we remain obligated to manage to our budget and use the TIG

process to re-prioritize projects within a year to stay within our overall budget.

Q. DO PROJECT PLAN CHANGES REQUIRE APPROVAL FROM THE TIG PROCESS?

A. Yes. Any change to the budget, schedule, or scope of a project must be approved by the TIG process to ensure that the change is necessary and well-documented and brought forward to TIG process leadership.

We must seek approvals in addition to the TIG process, including possibly Corporate Governance approval, if costs of larger projects exceed certain pre-approved levels.

Q. PLEASE EXPLAIN THE PROCESS TO ACCOMMODATE NECESSARY UNFORESEEN CAPITAL INVESTMENTS THAT OCCUR DURING THE PLANNED CAPITAL INVESTMENT YEAR.

A. We utilize the portfolio prioritization and balancing process to evaluate new demand or changes to existing project budgets and determine the most appropriate course of action. Newly identified projects must still proceed through the Gates process and may push other projects further down the priority list. In other situations, we may be able to accommodate a new project or expanded project scope or cost by approving an appropriate distribution of funds from Emergent Demand.

Q. WHAT IS EMERGENT DEMAND?

A. Emergent Demand is a capital investment category created to ensure we are able to meet the unanticipated aging technology, cyber security threats, and efficiency needs that inevitably emerge in each year. Given the ever-changing nature of technology and emerging risks, it is not possible to identify all projects

that may arise or become critical in a given year. For example, it is not always possible to predict what kind of security risk might be created by hackers as technology continues to develop. In other situations, as we develop a project with a particular scope, we may determine that additional benefits, including risk mitigation, improved safety or increased efficiencies, could be achieved by expanding the scope of the project. Emergent Demand allows the Company to address such issues without necessarily delaying or cancelling previously planned projects or otherwise absorbing unplanned work and costs. For the 2024 test year, a certain amount of the overall budget includes funds to address emerging needs, in addition to a certain amount that has been specifically budgeted to address emerging cyber security needs.

3. Capital Cost Controls

Q. IN ADDITION TO THE TIG PROCESS, DOES TECHNOLOGY SERVICES UNDERTAKE OTHER ONGOING STEPS TO CONTROL ITS COSTS?

A. Yes. Technology Services is continually taking steps to control costs. These efforts may include increasing or decreasing the scope of outsourced services, increasing or decreasing the use of consultants, and changing service providers. We also use competitive bidding practices and a multi-vendor sourcing strategy where possible, which enables the Company to utilize a combination of internal and external resources to minimize costs and maximize efficiencies in running our systems. In addition, Technology Services actively interacts with other IT organizations to learn how they control costs.

Q. CAN YOU PROVIDE MORE INFORMATION ABOUT THE COMPANY'S COMPETITIVE BIDDING PRACTICES?

A. Yes. Wherever possible, for the Company's key capital projects, the project

team used, or will use, a competitive bid process to ensure that: (1) costs remain in-line with the approved budget; (2) Xcel Energy receives quality service at a fair price; and (3) deliverables are completed per the agreed requirements. In addition, the project costs and schedules for these projects were based on internal experience with similar implementations and, in most cases, coupled with input from third-party consultants who we commissioned to ensure that the projects will deliver functionality that supports organizational objectives.

Generally, the only times a competitive bid process cannot be used are: (1) during upgrades to software or hardware components already provided by a vendor, in which engaging other providers would require a complete system overhaul; or (2) the limited times when multiple vendors are not available to undertake the necessary work or provide the necessary technology.

Q. CAN YOU IDENTIFY OTHER SPECIFIC COST CONTROL MEASURES THE COMPANY HAS UNDERTAKEN TO MANAGE COSTS?

A. Yes. When appropriate, we renegotiate contracts with key vendors and use a multi-vendor sourcing strategy to maintain competition between vendors for our business. The Company has also increased the use of fixed bid versus time and materials agreements with vendors for project delivery activities. This places a shared burden on the service providers to ensure costs remain within the expected totals.

Q. CAN YOU EXPLAIN IN MORE DETAIL WHY A MULTI-VENDOR SOURCING STRATEGY IS BENEFICIAL?

A. Yes. Technology Services utilizes multiple vendors to promote competition for our business and create an incentive to keep the price of their services

reasonable. Overall, we are constantly managing spending, ensuring alliance with our budget, and looking for opportunities to control or reduce costs.

D. 2024 Capital Additions

Q. WHAT CAPITAL ADDITIONS IS TECHNOLOGY SERVICES PROPOSING TO MAKE IN 2024?

A. The NSPM (State of Minnesota Gas Jurisdiction) Technology Services 2024 capital additions included in our rate request are budgeted to be approximately $11.1 million as shown in Table 6 below. These investments are presented in the budget groupings aligning with the key investment needs described earlier in my testimony. This includes the Emergent Demand category that exists to support project changes in the other capital budget groupings. I will walk through the major projects for 2024 in each grouping in this section of my testimony, focusing on the capital additions.

Table 6
2024 Capital Additions
(Dollars in Millions)

NSPM Category	**2024 Test Year**
Aging Technology	$5.5
Cyber Security	0.6
Enhance Capabilities	2.4
Customer	1.7
Emergent Demand	0.8
Total	**$11.1**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

1. Aging Technology

Q. WHAT CAPITAL PROJECTS RELATED TO AGING TECHNOLOGY ARE INCLUDED IN THE 2024 TEST YEAR?

A. We anticipate a total of approximately $5.5 million in capital additions in 2024 related to aging technology. In addition to more routine annual refresh projects, we will be placing specific projects in service that will have a significant impact on our IT additions across the Company. The individual projects are shown in Table 7 below and I walk through each of these projects in the following testimony.

Table 7
2024 Aging Technology Capital Additions
(Dollars in Millions)

NSPM Project	**2024 Test Year**
Gas Transaction System (GTS) - Measurement	$1.5
Gas Plant SCADA Replacement	1.3
Annual Refresh Projects	0.9
ESB Modernization	0.5
Enterprise Gas SCADA Upgrade Project	0.3
WAN NSPMN	0.1
VoIP Refresh	0.1
Enterprise Metadata Management	0.1
Video Conferencing Enablement	0.1
SAP Continuous Improvements	0.1
DR Technology Refresh	0.1
Facility IT Investments	0.1
Aging Technology (small investments)	0.3
Total	**$5.5**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

a. Gas Transaction System (GTS) – Measurement

Q. PLEASE DESCRIBE THIS PROJECT.

A. The Gas Transactional System (GTS) consists of two core applications developed by Quorum Business Solutions: PGAS and Quorum's Pipeline Transaction Management System (QPTM). PGAS is responsible for handling measurement data for gas transport meters and gas quality management. QPTM collects and integrates other gas transport-related data with the information provided by PGAS to support day-to-day operations of the gas transport business.

Since implementation of this suite, Quorum has acquired Flow-Cal, Inc. (Flow-Cal). Flow-Cal was a direct competitor to Quorum's PGAS for the management of natural gas measurement data. Consequently, Quorum has informed customers that PGAS will no longer be supported. As a result, the Company is migrating from PGAS to Flow-Cal for management of measurement data for gas transport meters and gas quality management. Simultaneously, the company will upgrade to the latest version of QPTM to bolster security and minimize risks tied to the integration of QPTM with Flow-Cal.

b. Gas Plant SCADA Replacement

Q. PLEASE DESCRIBE THIS PROJECT.

A. Overall, the Gas Plant SCADA System Replacement project is a multi-phase project that includes work already completed in 2022 with additional implementations for the 2024 test year. Phase 1 work involved the replacement of the outdated Citect Gas SCADA system at the Wescott, Sibley, and Maplewood Gas Plants with a modern, robust SCADA solution. The previous Gas Plant SCADA system is in need of upgrading to support regular business

operations. For 2024, Phase 2 of the project involves physical plant device modifications that will require control system upgrades at the three plants, implementation of a hardware and software backup and recovery solution, implementation of an operational solution for centralized communications and control of the gas plants, gas turbine and compressor upgrades that will require updates to the control system software, network, Programmable Logic Controllers, and the emergency safety shutdown system and dependent hardware.

c. Annual Refresh Projects

Q. PLEASE DESCRIBE "ANNUAL REFRESH" PROJECTS.

A. Given the breadth and depth of the different equipment Xcel Energy utilizes and manages, Technology Services refreshes smaller components of technology infrastructure on regular cycles. We annually budget for these replacements as routine refresh projects, which we also refer to as life cycle management (LFCM) projects. LFCM projects refer to those projects that relate to updating or refreshing day-to-day technology on a routine basis. LFCM projects include LFCM – Data Storage, LFCM – Network Services, LFCM – OT Modernization, LFCM – End User Enablement, and LFCM Infrastructure Services. I provide capital additions for these projects for 2024 in Table 8 below.

Table 8
2024 Annual Refresh Capital Additions
(Dollars in Millions)

NSPM Project	2024 Test Year
LFCM - Network Services	$ .3
LFCM - End User Enablement	.2
LFCM - OT Modernization	.2
LFCM - Data Storage	.1
LFCM - Infrastructure Services	.1
Total	**$ .9**

Q. CAN YOU DESCRIBE THE DIFFERENT TYPES OF TECHNOLOGY THAT ARE COVERED BY EACH OF THESE REFRESH WORK ORDERS IN TABLE 8 ABOVE?

A. Yes. These refreshes cover:

- *LFCM - Network Services:* This project work involves planned replacement of network devices (switches, routers, radios, channel banks and voice systems) due to aging technology, out-of-support equipment, security vulnerabilities, and to enable new required capabilities.
- *LFCM – End User Enablement:* This project involves replacement of personal computers (PCs) and other end user devices, such as printers, annually as they reach the end of their service life.
- *LFCM – OT Modernization:* Lifecycle management for Operations Technology (OT) Modernization will help to replace and/or decommission active end of life equipment. The scope of this work will include Land Mobile Radio (LMR) replacements, Uninterrupted Power Supply (UPS) remediations and battery replacements. End of life devices leave our network and infrastructure vulnerable; updates not installed can increase security risk.

- *LFCM Data Storage:* The LFCM Data Storage project replaces data storage hardware that is no longer cost-effective to support, or that presents significant risk to operations due to aging components or lack of vendor support.
- *LFCM – Infrastructure Services:* This project involves replacing aging servers prior to failure to support business growth and maintain reliability. Lifecycle management for infrastructure services will help to replace and/or decommission active end of life equipment including the replacement of servers and licenses.

Q. HOW DOES TECHNOLOGY SERVICES DEVELOP ITS BUDGETS FOR REFRESH PROJECTS?

A. While the budget methodology varies depending on the nature of the assets to be refreshed, a refresh budget is generally determined by one or more of the following factors:

- The number of devices or systems that will reach end of life during the budget period. This is typically based on an established lifecycle plan. For example, PCs, mobile data terminals, and portable meter reading devices have a four-year life. Thus, on average, approximately 30 percent of them are replaced per year.
- The number of devices expected to permanently fail outside warranty, and in the case of portable devices, the number expected to be damaged, or lost. This is based on historical trends.
- Planned incremental growth in demand (e.g., data storage, network bandwidth, number of computer users, new physical sites, etc.). This is based on Company and industry trends and known business plans.
- The devices or systems that must be replaced to meet new security,

software compatibility, or business requirements.

- The devices or systems for which vendor support will cease or become prohibitively expensive.

Overall, these refresh efforts result in an orderly, thoughtful, and cost-effective means of managing aging technology while planning the timing and urgency of aging technology upgrades or replacements in order prioritize the most critical projects.

d. ESB Modernization

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will modernize and improve the resiliency of the Enterprise Service Bus (ESB) architecture. ESB is an architecture for distributed computing that performs integrations among applications in a standardized and more simple way across an enterprise.

e. Enterprise Gas SCADA Upgrade Project

Q. PLEASE DESCRIBE THIS PROJECT.

A. The Enterprise GAS SCADA system is responsible for monitoring and controlling the entire gas network. This project focuses on updating the hardware and software components of the current Gas SCADA systems, which have either reached or are approaching their end-of-life, in order to maintain the functionality and reliability of the gas network monitoring and control.

f. WAN NSPMN

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project includes the detail design, planning, installation and commissioning of equipment that comprises an expansion and privatization of the Company's

corporate Wide Area Network (WAN) across our service territories. The WAN work includes network infrastructure investments to support connection between the Company's various locations together and providing the pathway to enable critical business services. Investments support communication services for our business including the SCADA connectivity for monitoring and control of the gas system. In addition, enterprise services are delivered to enable end users to connect to corporate applications like email, General Ledger, Work and Asset Management system, and internet access.

g. VoIP Refresh

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project aims to support core day-to-day voice communication functions crucial for business operations by upgrading Company technologies for the delivery of voice communications over the Internet. This refresh project represents both replacing legacy communications systems and upgrading to more modern VoIP (Voice over Internet Protocol) communication systems.

h. Enterprise Metadata Management Project

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will deploy new software to enable metadata management across Xcel Energy and will enable numerous capabilities for metadata management and standardization. It will enable the management and publishing of consistent metadata definitions across the Company. It will also leverage the correct metadata and integrate the Company's systems in order to make effective data-driven decisions. This project will also facilitate standardizing metadata for business master data and standardize and consolidate among various sources from programs such as Microsoft Word and Excel.

i. Video Conferencing Enablement

Q. PLEASE DESCRIBE THIS PROJECT.

A. The Video Conferencing enablement project aims to enhance collaboration among employees through standardized conference room configurations and equipment, facilitating efficient remote collaboration by modernizing conference rooms and deploying video conferencing solutions, the project aims to create consistent collaboration experiences across different room configurations and sizes.

j. SAP Continuous Improvements

Q. PLEASE DESCRIBE THIS PROJECT.

A. SAP is the enterprise application that supports the Company's work and asset management, financial general ledger and other important business processes. SAP Continuous Improvements is a multi-year project that will maintain and refresh existing SAP components to ensure reliability and will also deploy new capabilities. For example, a new platform for job scheduling and workload automation will be implemented to replace the current software that SAP will no longer support in the near future. This new platform is expected to provide uninterrupted business process support while enabling new process automation and scheduling tools.

k. DR Technology Refresh

Q. PLEASE DESCRIBE THIS PROJECT.

A. This project will enable the Company to proactively test and implement a new methodology for system recovery during a disaster such as power outages and other system failures that can result in lost data and system issues. The project will help ensure business continuity, regardless of the circumstances. The DR

Technology Refresh will replace aging disaster recovery hardware and will provide hardware and software solutions to ensure that the Company will be fully prepared to operate during a situation that could negatively impact the operation of the Company's primary systems.

l. Facility IT Investments

Q. PLEASE DESCRIBE THIS PROJECT.

A. This initiative includes the deployment of critical IT infrastructure components to service centers, such as Belle Plaine, or offices. This includes Main Distribution Frames (MDF), Intermediate Distribution Frames (IDF), cabling for workstations and phones, deployment of wireless access points, and the setup of routers, switches, and firewalls to ensure security.

m. Aging Technology (Small Investments)

Q. PLEASE DESCRIBE THIS PROJECT.

A. The Company is also placing in service many other smaller projects in 2024 that will address aging IT needs. These smaller projects also enable the Company to keep systems reasonably upgraded to continue to meet business, reliability, or compliance needs. These smaller projects include work like Infrastructure Modernization and SharePoint on-premises upgrades.

2. Cyber Security

Q. WHAT CAPITAL PROJECTS RELATED TO EVOLVING CYBER SECURITY THREATS AND REQUIREMENTS ARE INCLUDED IN THE 2024 TEST YEAR?

A. We anticipate a total of approximately $0.6 million in capital additions in 2024 related to cyber security as shown in Table 9 below. I discuss the projects that comprise the majority of the 2024 cyber security capital additions in the following testimony.

Table 9
2024 Cyber Security Capital Additions
(Dollars in Millions)

NSPM Project	**2024 Test Year**
Emergent Demand Security	$0.4
Vulnerability and Patch Management	0.1
Red Team Program Development	0.04
Grideon Emergency Management	0.03
Unix and Linux Access Control	0.02
Cyber Security (small investment)	0.1
Total	**$0.6**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

Q. WHAT IS THE EMERGENT DEMAND SECURITY PROJECTS?

A. These projects are budgeted for cyber security projects to be placed in service in 2024 that will provide continued refreshes for prevention, detection, containment, and corrective services to protect the Company from security incidents, and assist in the recovery from any adverse events. As I discussed above, a challenge facing Technology Services is that cyber security threats are constantly in flux and may result in additional investment in a given year to

ensure that cyber security tools and resources are responsive to new threats. Emergent Demand funds earmarked for cyber security ensures that the Company is able to meet these challenges and risks. Projects ultimately chosen to meet these cyber security needs will be formally approved under the TIG process.

Q. PLEASE DESCRIBE THE VULNERABILITY AND PATCH MANAGEMENT PROJECT.

A. Vulnerability and Patch Management are how the Company detects and tracks vulnerabilities in our IT environment to enable risk-reducing updates and other risk mitigation measures to our systems. It is an important part of securing the Company and customer assets and information. The technology investments in this project support the broader Operations Technology Vulnerability and Patch Management Plan that was developed in partnership with the Security and Operations business areas. The scope of the project is broken into two primary areas: 1) Vulnerability Management and 2) Patch Management. The goals of this project include standardizing and automating vulnerability scanning and patch management while expanding these capabilities to additional Operations areas, including Gas, Distribution, and Transmission. The project will also establish the Operation Technology Security Lab to facilitate management of the technologies and associated processes.

Q. WHAT IS THE RED TEAM PROGRAM DEVELOPMENT PROJECT?

A. A "Red Team" refers to a group of people who play the role of an enemy trying to get past the cybersecurity defenses of the "Blue Team." The Red Team is able to identify strengths and vulnerabilities in a system, which are later reported back to the Blue Team. Currently, penetration tests and Red Team engagements are contracted out to third party vendors, which presents a cost in dollars, time,

and resources in order to navigate the internal processes to contract and perform the tests and engagements. The objective of this project is to implement a Red Team for performing internal penetration testing and related engagements, reducing the dependency on external vendors to provide these services.

Q. WHAT IS THE GRIDEON EMERGENCY MANAGEMENT PROJECT?

A. This project will implement a utility-based wildfire management platform that will enable the management of complete incident lifecycle – anticipating threats, preparing for incident management, adapting to changing incident situations, and learning and improving incident management post incident. The project will also deploy a Common Operating Picture (COP), which is a critical tool in managing wildfire response operations. A COP provides a real-time, shared understanding of the incident, enabling responding agencies to work collaboratively and effectively.

Q. WHAT IS THE UNIX AND LINUX ACCESS CONTROL PROJECT?

A. This project will provide consistent access control across servers and applications, including a standard access request workflow, account management, password management, access certification, account vaulting, and preventative/detective access controls. Applying enterprise security standards consistently to the management of privileged access greatly decreases the potential for cyber security compromise and regulatory non-compliance.

Q. PLEASE DESCRIBE OTHER CYBER SECURITY PROJECTS THAT THE COMPANY IS PLACING IN SERVICE IN 2024.

A. These projects include investments that provide prevention, detection,

containment, and corrective services to protect the Company from security incidents and assist in the recovery from any adverse events. It is imperative to refresh our technology to ensure continued compliance with regulatory requirements for customer data and overall corporate security objectives, while reducing our business's and our customers' exposure to evolving cyber security risks and vulnerabilities.

Cyber security investments support the availability, integrity, and confidentiality of our information systems, and help ensure that we meet our legal and regulatory obligations and risk management objectives. Continually evolving cyber security threats and associated regulatory structure require ongoing investment into annual security technology refreshes. These smaller projects include work like Reprivata monitoring sensors, Full Packet Capture project, Service Account Remediation, FireEye IDS-IPS project, and other smaller cyber security projects.

3. Enhancing Capabilities

Q. WHAT CAPITAL PROJECTS RELATED TO ENHANCING COMPANY CAPABILITIES ARE INCLUDED IN THE 2024 TEST YEAR?

A. We anticipate a total of approximately $2.4 million in capital additions in 2024 related to enhancing capabilities, as shown in Table 10 below. I discuss the projects that comprise the majority of the 2024 enhancing capabilities capital additions in the following testimony.

Table 10
2024 Enhancing Capabilities Capital Additions
(Dollars in Millions)

NSPM Project	**2024 Test Year**
Private LTE	$1.9
Kafka Expansion	0.2
Unmanned Aircraft Systems Program	0.1
End User Services Enhancements	0.1
Network Voice Enhancements	0.1
Supply Chain Procure to Pay	0.03
Enhancing Capabilities (Small Investment)	0.1
Total	**$2.4**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

Q. WHAT IS THE PRIVATE LTE PROJECT?

A. Private LTE is a project that will serve both electric and gas assets, with the amounts in this case being the gas-allocated portions. The Private LTE project will enhance the Company's capabilities with regard to its SCADA system, which as I indicated above is a system used by Xcel Energy to monitor and control complex gas processes and equipment in real-time. Under this project, the Company will create and deploy its own private LTE wireless network across its service area, which will supplement the LTE communications network that is currently provided by a third-party telecommunications company. The Private LTE project will improve the resiliency and security of the gas SCADA environment by having an additional layer of connectivity over the current, public communications network, which the Company will continue to utilize as a backup service. Because of this redundant design, there will be

fewer outages and fewer instances of field workers being dispatched when communications are lost.

One of the main benefits of having a private LTE network is the security of information related to the Company's natural gas distribution system (critical to ensuring safe and reliable service for our customers), which will route through the Company's private LTE system rather than the third-party's public communications network. There are also other primary benefits, such as the Company's ability to more efficiently scale up and accommodate the future expansion of IoT devices (Internet of things devices with sensors and other applications) that are integral to our natural gas operations. Once a particular geographical area is covered by private LTE, adding additional devices and sensors has minimal to no additional costs to the network. The Company has determined that its customers would be best served by implementing the Private LTE project now, where large-scale deployment and management of devices necessitate a more robust and consistent connectivity solution than is presently available.

Q. WHAT IS THE KAFKA EXPANSION PROJECT?

A. Kafka is an open source distributed streaming platform that is built for publishing, consuming, storing, and processing streams of data records in real time. Streaming data is consistently generated by many data sources and Kafka enables the Company to handle this streaming data sequentially and constantly. This project involves expanding Kafka to enhance strategic data streaming capabilities.

Q. WHAT IS THE UNMANNED AIRCRAFT SYSTEMS PROGRAM?

A. This initiative focuses on the enhancement and implementation of a managed drone environment that will allow the Company to operate a fleet of drones across all business units, ensuring regulatory compliance and appropriate flight planning, security of drone data, ability to ingest data into the network and visualize as well as analyze the data on an as-needed basis for each business unit partner. One way that drones are used in our gas operations is to inspect gas pipelines spanning under bridges. For instance, in St. Paul, a gas line attached to the side of a bridge has been inspected multiple times via drone due to access and safety concerns. This innovative approach eliminates the need for a specialized bridge inspection vehicle called a snooper truck. As a result, it avoids the requirement of traffic control or highway shutdown, ensuring minimal disruption to road and railway traffic. The solution will mitigate the risk of drone use, will enable and accelerate the use of drones across all business units, and will lead to efficiency gains in operations while limiting the potential of injury risk for what otherwise would have been manned activities.

Q. WHAT IS THE END USER SERVICES ENHANCEMENTS PROJECT?

A. The project is primarily about streamlining and enhancing the use of Microsoft products and technology to benefit both field devices and corporate devices. The goal is to reduce friction for employees by ensuring they have the right hardware, mobile devices, and software in place and by fully leveraging the Microsoft suite of tools. It includes an upgrade from Windows 10 to Windows 11, increased use of Microsoft OneDrive, and enhancing the utilization of Microsoft products.

Q. WHAT IS THE NETWORK VOICE ENHANCEMENTS PROJECT?

A. This program is designed to maintain, upgrade, and rationalize our voice communication technology systems across Xcel Energy. The project scope includes implementing Unified Communications, a centralized platform that allows employees to manage calls, chats and emails from any device, modernizing legacy analog systems, improving Microsoft Teams integrations to streamline collaboration, and transitioning from the Avaya Cloud to an on-premises Regulatory/Compliance Avaya Core. This transition aligns with the conclusion of the Avaya Cloud Contract in 2024.

Q. WHAT IS THE SUPPLY CHAIN PROCURE TO PAY PROJECT?

A. The objective of this project is to build a comprehensive digital structure that improves data accuracy and transparency to generate insights into spend, supplier transactions, and key supply chain performance metrics. A portfolio of digital tools and solutions will prioritize the implementation of master data cleansing and management, cost modeling, category analytics, a spend control dashboard, a contract labor management platform, a supplier management platform, performance management dashboards, and process automation.

Q. WHAT IS THE STRATEGIC FIBER DEPLOYMENT PROJECT?

A. Under this project, the Company will acquire fiber optic cable assets in order to support enterprise network connectivity. Acquiring fiber allows for more control over technology resiliency, capacity, and architecture. The high availability design of the network makes use of diversity in a couple ways: fiber cabling enters the buildings via two physically separate entrances; and buildings have two fibers available to carry traffic, allowing for one fiber to be cut without an impact to operations. The Strategic Fiber network design is based on a dual

entrance topology solution that will use existing and new fiber optic cables in order to maintain operational business partner requirements related to latency (speed of transmission), availability and bandwidth for transmission of information through cables.

During implementation, the Company will procure new and extend existing fiber optic cables to certain sites in the Twin Cities area. These sites were identified as having high monthly recurring costs typically due to the lack of connectivity options at these locations coupled with the importance of these locations in Xcel Energy's operations, mandating their perpetual and expensive usage. The project will allow for substantial network growth due to the fiber lines being wholly dedicated to Xcel Energy's usage and are therefore not as dependent upon usage as leased/shared circuits. Another benefit of the Strategic Fiber Deployment project is to provide high speed access to various entities that Xcel Energy has relationships with, like public cloud providers such as Amazon Web Services, Microsoft Azure, Google GCP, and various network partners like CenturyLink and Verizon.

Q. WHAT ARE OTHER PROJECTS TO ENHANCE CAPABILITIES THAT ARE BEING PLACED IN SERVICE IN 2024?

A. The Company is also placing in service many other smaller projects in 2024 that will enhance the Company's capabilities. These smaller projects, like large projects, also enable the Company to improve productivity, enhance communications between systems, and between people, and use data more efficiently. Examples of these projects are Network Security Services Enhancements and Route and Switch enhancements.

4. Customer Experience

Q. WHAT CAPITAL PROJECTS RELATED TO ENHANCING THE CUSTOMER EXPERIENCE ARE INCLUDED IN THE 2024 TEST YEAR?

A. We anticipate a total of approximately $1.7 million in capital additions in 2024 related to customer experience. The individual projects are shown in Table 11 below. I describe the majority of work that encompasses customer experience projects in the following section of my testimony.

Table 11
2024 Customer Experience Capital Additions
(Dollars in Millions)

NSPM Project	2024 Test Year
Customer Experience Transformation Phase 3	$1.7
Customer Care IVR Upgrades	0.1
Total	**$1.7**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

Q. WHAT IS THE CUSTOMER EXPERIENCE PHASE 3 PROJECT?

A. This project aims to place various customer-facing products in-service, which I describe below:

- *Pay your Bill*: This project is intended to increase customer satisfaction by enabling customers to pay their bills through a variety of payment methods, including Google and Apple Pay.
- *View and Understand your Bill*: This product empowers customers to make sense of their bill by providing a variety of approaches: through easy access to current and historical statements, simplified breakdowns and explanations of different rate and tariff components in the bill, and

contextual insights to visualize their usage and cost patterns to understand their bill.

- *On/Offboard*: This solution provides customers with the ability to fully understand the various service offerings that are available to them: from different rate structures to metering and hardware solutions. Furthermore, we aim to create a more accurate and customer-friendly approach to starting, transferring, or stopping service. Today a lot of the process is manual and one of the goals is to automate it, as well as to transmit clear communications (based on customer channel preference) on customers' service status and changes.
- *Save Money*: This product empowers customers to save money by providing consistent, actionable, and personalized recommendations and solutions that fit the customer needs. These gas saving tips, as well as home heating and cooling recommendations, can be found through all methods of communication.
- *Optimize Energy Usage*: This tool aims to empower customers to actively understand, manage and automate their energy consumption (past, present and future) through technological innovations, upgrades, and visualizations that contribute to optimized or reduced energy and a clean energy future. The goal is for customers to understand where they are using energy and thereby use that information to manage their consumption.
- *General Help*: This aims to empower customers to immediately find the comprehensive, relevant, and credible information they desire through assistive, guided, and AI technologies.

These investments aim to increase customer satisfaction and provide our customers with a seamless and positive experience when interacting with Xcel Energy through our technology platforms, whether it is on their desktop or their phone. Furthermore, the Company's investments in Customer-facing technologies result in increased first-contact resolution as well as improved (customer service) agent efficiency.

Q. WHAT IS THE CUSTOMER CARE INTERACTIVE VOICE RESPONSE (IVR) UPGRADES PROJECT?

A. This project will be upgrading all Contact Center IVR and dependent Avaya infrastructure to ensure continued IVR business capability across all three customer contact centers plus the Business Solutions Center. This upgrade, as well as the enhancements to the Contact Center IVR environment, will stabilize the platform to support advancing the IVR menu structure from touch tone to Natural Language Understanding. The upgrade is expected to improve IVR usability and increase customer self-service. Furthermore, the upgrade will leverage a higher performing, fault tolerant architecture, cloud technology, and carrier redundancy.

5. Emergent Demand

Q. DOES TECHNOLOGY SERVICES HAVE CAPITAL COSTS THAT SPREAD ACROSS ALL KEY BUDGET CATEGORIES?

A. Yes. Given the ever-changing nature of technology and emerging cyber security risks, it is not possible to identify all projects that may be needed in a given year. To ensure that we are able to meet our overall objectives, a number of years ago we created Emergent Demand as an efficient way to fund important and unexpected projects.

Q. HOW DOES EMERGENT DEMAND HELP ENSURE THAT TECHNOLOGY SERVICES MEETS ITS KEY OBJECTIVES?

A. Emergent Demand provides Technology Services with the ability to assess and address, as appropriate, emerging technology needs as they arise. For instance, we may identify a risk associated with existing technology that needs to be addressed earlier than initially planned. In other instances, we might begin implementing new software and then learn of a new function that is cost-effective to adopt at the same time the project is implemented.

Whether the funding requirement is from a scope change to an existing project, or to address a new risk or a new identified need, Emergent Demand allows us to effectively ensure adequate funding for projects that cannot always be predicted in our fast-changing environment.

Q. HOW LONG HAS TECHNOLOGY SERVICES MANAGED EMERGENT NEEDS OF THE ORGANIZATION IN THIS WAY?

A. We began specifically planning for emergent needs in this manner in 2013. Prior to creation of the Emergent Demand budget we had to delay or cancel previously planned projects or absorb unplanned work and costs when a new technology or critical need was identified. These changes would often disrupt the parts of the business relying on our original plan and would impact other long-term plans that affect the Company, our customers, or both.

Q. WHAT PROCESS WAS USED TO ESTABLISH THE 2024 TEST YEAR EMERGENT DEMAND BUDGET?

A. The current budget for the 2024 test year of about $0.8 million is based on business priorities for the year, balanced by the overall business area capital

spending guidelines. In other words, the Emergent Demand budget reflects the need to ensure adequate funds for emerging technology needs – whether emerging new projects or enhancements to currently planned projects. IT projects funded by Emergent Demand will be approved through our TIG process I identified above, in accordance with our budget process.

Q. WHAT ARE THE BENEFITS OF BUDGETING FOR EMERGENT DEMAND?

A. In addition to being available to undertake emerging projects as I describe above, Emergent Demand allows us to more comprehensively vet requested changes in individual project scope. Before a project team can access Emergent Demand funds, a project must again be reviewed and approved under the TIG process.

Q. CAN YOU EXPLAIN IN MORE DETAIL HOW REQUESTS FOR FUNDING FROM EMERGENT DEMAND ARE REVIEWED?

A. Yes. Requests for funds from Emergent Demand, including any request that may arise for a new project or for more funding on an existing project, are reviewed to ensure need. Emergent Demand therefore provides another layer of governance for existing projects because they must receive an additional round of approval before being allocated funds from Emergent Demand.

Q. WHAT DO YOU CONCLUDE WITH RESPECT TO THE OVERALL LEVEL OF TECHNOLOGY SERVICES CAPITAL COSTS THE COMPANY IS SEEKING TO RECOVER IN THIS RATE CASE?

A. The overall level of Technology Services costs is reasonable, as shown by the above discussion, and is necessary to support an appropriate level of service to our customers. Finally, the costs included in our 2024 capital budget are

representative of the types of work we must do year over year.

IV. O&M BUDGET

A. O&M Overview

Q. WHAT IS INCLUDED IN THE TECHNOLOGY SERVICES O&M BUDGET?

A. The Technology Services O&M budget consists of costs related to the operation and maintenance of existing IT assets such as software systems, computers, printers, phones, radio systems, and servers. It also includes annual software contract and license fees, as well as maintenance agreements, for existing software and hardware. In addition, the O&M budget includes non-capitalized costs associated with developing, enhancing, and maintaining new or existing IT systems.

Q. WHAT ARE THE OVERALL TRENDS FOR TECHNOLOGY SERVICES' O&M EXPENSES?

A. Overall, O&M expense has remained largely flat since 2020, with a relatively modest increase in 2024 driven primarily by increases in certain areas like Software License and Maintenance expense over that time period, but offset by decreases in other areas.

Q. AT A HIGH LEVEL, HOW DOES THE TEST YEAR BUDGET ENSURE CUSTOMER VALUE FOR COMPANY INVESTMENTS?

A. These investments benefit our customers in several respects. First, as I have discussed throughout my testimony, Technology Services invests in technologies and supporting services that are necessary for system reliability and security, operational decision-making, and improved customer support and

business capabilities, which requires the Company to correspondingly incur O&M expense in order to continue to serve our customers and to protect them and our business from cyber security and system failure risk. Second, our investments in technology help other business areas serve customers efficiently and effectively. Finally, our investments are intended to maintain and enhance our service to customers, including in the ways customers interact with Xcel Energy. Without making these investments, we could not provide reliable, quality service to our customers.

Q. WHAT IS THE COMPANY'S TECHNOLOGY SERVICES O&M BUDGET FOR THE 2024 TEST YEAR?

A. The total Technology Services O&M budget for the 2024 test year is approximately $11 million. The basis for this budget is set forth in detail below. I present the Technology Services O&M budget on a State of Minnesota Gas Jurisdictional basis.

Q. WHAT ARE THE BASIC CATEGORIES OF THE O&M BUDGET?

A. The test-year Technology Services O&M budget for natural gas service can be broken down into 8 categories: (1) Network Services; (2) Software License and Maintenance; (3) Company Labor; (4) Application Development and Maintenance; (5) Contract Labor and Consulting; (6) Shared Assets Allocation; (7) Hardware Purchases and Maintenance (including equipment maintenance); and (8) Other. Table 12 below shows the 2024 Technology Services O&M budget by category, in addition to actuals for 2020-2022 and partially in 2023:

Table 12
Technology Services 2020-2024 O&M Actual and Budgeted Expenditures
(Dollars in Millions)
(State of Minnesota Gas Jurisdiction)

NSPM Cost Category	2020 Actuals	2021 Actuals	2022 Actuals	2023 Forecast	2024 Test Year
Network Services	$1.1	$1.1	$0.8	$1.2	$1.1
Software License & Maintenance	2.6	2.9	3.4	3.7	3.8
Company Labor	1.5	1.4	1.5	1.7	1.7
Application Development & Maintenance	1.6	1.6	1.3	0.7	0.7
Contract Labor/Consulting	0.7	0.4	0.8	0.6	0.5
Shared Assets Allocation	2.5	2.2	2.1	2.2	2.7
Hardware Purchases & Maintenance	0.2	0.3	0.3	0.3	0.2
Other	0.3	0.3	0.2	0.3	0.2
Total	**$10.4**	**$10.2**	**$10.4**	**$10.9**	**$11.0**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

Q. OVERALL, HOW DOES THE 2024 BUDGET COMPARE TO 2023?

A. The Technology Services' 2024 budget is approximately one percent higher than the 2023 actuals/forecast. Exhibit___(MOR-1), Schedule 4 and Exhibit___(MOR-1), Schedule 5 also provide further breakdowns of O&M costs. There are certain areas that are increasing O&M expense, such as Software License and Maintenance and Shared Assets Allocation, but other areas are decreasing in 2024 or are relatively flat compared to 2023, which can be attributed to cost control measures and continuous improvements, including resource, management, and work prioritization. Therefore, Technology Services O&M expense is generally flat over these years and is only modestly increasing.

I discuss the various O&M categories in more detail below after a brief overview of the O&M budget process.

B. O&M Budget Process

Q. HOW DOES THE COMPANY SET THE O&M BUDGET FOR THE TECHNOLOGY SERVICES BUSINESS UNIT?

A. Our O&M budget process is similar to our capital budget process in that both are based on a partnership between corporate management of overall finances and the business needs we identify. Company witness Haworth explains how the Company establishes business area O&M spending guidelines and budgets based on financing availability, specific needs of business areas, and overall needs of the Company. Overall, we establish a reasonable annual O&M level that allows Technology Services to complete priorities that are important to providing a reasonable level of services to the Company and our customers.

Q. DOES TECHNOLOGY SERVICES EVER NEED TO CHANGE THE USE OF BUDGETED O&M FUNDS DURING THE FINANCIAL YEAR?

A. Yes. As mentioned earlier in my testimony, Technology Services adjusts for changing business impacts such as updates in technology, customer expectations, operating priorities of the business units across the Company, and the Company finance area. There are times when O&M funds are shifted within Technology Services during the year, typically to address unplanned requirements.

Q. HOW DOES THE COMPANY DETERMINE CHANGES IN THE TECHNOLOGY SERVICES O&M BUDGET FOR FUTURE YEARS?

A. As part of the Company's annual budget process, Technology Services performs a review of existing services and expected new services to determine budget needs for future years. This includes an evaluation of annual contract cost escalators for vendors, annual merit increases, changes in the quantity of services estimated to be consumed, and new services. This information is reviewed and evaluated through the budget process and a budget is established for Technology Services for future years.

Q DOES THE COMPANY HAVE A PROCESS FOR MITIGATING DEVIATIONS IN ACTUAL EXPENDITURES COMPARED TO BUDGETED EXPENDITURES?

A. Yes. As I previously described for the capital budget, Technology Services management monitors actual versus budget expenditures for both capital and O&M efforts on a monthly basis. Deviations are evaluated and action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures to support the overall authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

C. O&M Budget Detail

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

A. In this section, I describe in detail the components of Technology Services that make up the O&M budget and discuss ways that the Company mitigates O&M cost growth.

1. Network Services

Q. WHAT ARE NETWORK SERVICES?

A. This category includes costs related to the maintenance of existing circuits, phones, microwave and radio systems, and other IT network infrastructure assets. Network activities provide operation and management of the Company's internal and external data transmission requirements. Network services are budgeted based on a price times a quantity. These costs are dependent upon Xcel Energy's service usage levels and the number of assets in use. As more IT infrastructure is put in place, network maintenance costs increase.

Q. WHAT NETWORK ENHANCEMENTS COST CHANGES ARE YOU ANTICIPATING DURING THE TEST YEAR?

A. Network services in 2024 reflects the increased usage of the organization's network to support new applications and demand for greater speed and capacity to support existing systems. These usage and demand needs increase each year, as technology advances, new requirements or capabilities are identified, and sites are added. These costs are slightly lower during the test year, however, due to the optimization of carrier costs. This has resulted in cost savings realized in O&M that would otherwise be higher.

In addition, our network projects identified in the capital section of my testimony allow for growth and measures to control of O&M network costs. For instance, the privatization and leveraging of Company assets, such as fiber-optic transport as mentioned in Section III.B.3, has enabled cost containment for network services.

The work executed under Network services also encompasses the need to upgrade and replace aging components of the network. For example, the SCADA circuits that have been in place for many years for transmission and distribution purposes are based on legacy analog technology. That technology is now digital and those new digital circuits require maintenance to keep current. Another example is the Company's investment in expanding the wireless network in its offices and service centers to aid productivity. This expansion places new assets in service that must be maintained.

Network services costs for the 2024 test year are $1.1 million.

2. Software License and Maintenance

Q. WHAT IS SOFTWARE LICENSE AND MAINTENANCE?

A. This category includes expenses for payments to vendors for license agreements associated with various applications and desktop tools used by the Company to perform services. These license payments give users the right to use the software and covers periodic software updates. Additionally, the Company must pay maintenance fees in order to install support patches, install fixes, and receive technical support.

Q. WHAT SOFTWARE LICENSE AND MAINTENANCE COST CHANGES ARE YOU ANTICIPATING FOR THE 2024 TEST YEAR?

A. Software license and maintenance costs have been increasing since 2020 due to new software being placed in service, in addition to the Company needing to keep existing software in support. In particular, there are three major drivers of the increase to the 2024 budget compared to 2020 actuals, stemming overall from increasing costs in the industry. First, software costs are driven in part by

net new projects, such as our CXT and Core HR program, which the Company began to implement in 2019 and 2023 respectively, as well as other investments the Company is making. That is, much of IT's increases in O&M are driven by new IT capital investments that benefit the Company's business areas and our customers, but also lead to new licensing and maintenance agreements that increase IT O&M. For example, the Enterprise timekeeping application that was implemented as part of the Core HR project is now hosted on the cloud rather than on the mainframe, which brought about new O&M costs during the 2023 forecast year. Second, there are increased licensing costs driven by users, escalators in contracts, upgrades, and replacements. Investments like the Core HR project mentioned above, which replaced various end-of-life technologies, have added new subscription and maintenance fees in order to support the new software applications. Third, maintenance and support must stay current to limit vulnerabilities, such as cyber security threats. Nevertheless, software license and maintenance costs have remained relatively flat in the test year compared to 2023; however, these costs have been a primary driver in the overall increase in O&M expense for Technology Services since 2020.

Software license and maintenance costs for the 2024 test year are approximately $3.8 million.

Q. PLEASE DISCUSS EFFORTS TO MINIMIZE INCREASES IN SOFTWARE MAINTENANCE COSTS.

A. There are several approaches used to reduce the growth in this category. We evaluate the usage of desktop software to determine if the usage justifies the continued need for a product. For example, if a computer user has not used a software product recently, we redeploy the license to a user who has requested

the software, thereby avoiding the need to purchase a new license for that user. Additionally, Xcel Energy's Supply Chain team reviews expiring contracts and negotiate with vendors as part of the contract renewal process in an effort to reduce costs. For instance, we might extend the term of a maintenance agreement or consolidate various contracts into one in order to receive a discount, right-size a contract to align to actual usage or cancel a contract altogether. In the case of the OSI PI license renewal, we determined that consolidating the licenses used in Technology Services, Transmission and Gas Operations by obtaining an enterprise license that could result in better terms and pricing with vendors. Such efforts have helped us minimize overall increases for software maintenance costs.

3. Company Labor

Q. WHAT COMPANY LABOR COSTS ARE INCLUDED IN THE TECHNOLOGY SERVICES O&M BUDGET?

A. Our labor costs constitute compensation costs associated with all employees in the Technology Services department.

Q. WHAT COMPANY LABOR COST CHANGES DO YOU ANTICIPATE FOR THE 2024 TEST YEAR?

A. Labor costs for the test year are $1.7 million in 2024, which is materially consistent with the 2023 amount.

Q. PLEASE DISCUSS EFFORTS TO MINIMIZE INCREASES IN COMPANY LABOR COSTS.

A. Company labor costs are based on the employee headcount required to provide IT services to the organization. The employee headcount is managed through a workforce plan process that monitors changes and includes attrition

information as well as emergent needs. Changes to employee headcount for replacement related to attrition or for new headcount require assessment of the need for the personnel, the associated risks with not filling the position, and alternative options. This process has worked effectively and assures we have the correct resources in place with the right skills and allows us to manage costs.

4. Application Development and Maintenance

Q. WHAT IS APPLICATION DEVELOPMENT AND MAINTENANCE (ADM)?

A. ADM includes costs of services to develop, enhance, maintain, and consult on new or existing IT software and hardware applications.

Q. WHAT ADM COST CHANGES DO YOU ANTICIPATE FOR THE 2024 TEST YEAR?

A. Going forward, ADM costs are budgeted to be relatively flat at $0.7 million in 2024 compared to previous years. While in the past ADM costs had modestly increased largely due to added software programs, in 2022, the Company negotiated ADM support with new vendors, which has resulted in a relatively flat budget in 2024 compared to 2023. In addition, we continue to thoroughly evaluate our application portfolio on a regular basis to prioritize which enhancements should be implemented.

5. Contract Labor and Consulting

Q. WHAT COSTS ARE INCLUDED IN THE BUDGET AS CONTRACT LABOR AND CONSULTING?

A. These costs consist of fees and expenses for professional consultants or knowledge-based experts that are not employees of the Company. This category also includes staff augmentation through staffing agencies.

Q. WHAT CONTRACT LABOR COST CHANGES DO YOU ANTICIPATE FOR THE 2024 TEST YEAR?

A. Contract labor costs are $0.5 million for the 2024 budget. Actuals from 2020-2023 are higher than the 2024 budget due primarily to a mandatory 90 percent capitalization rule for contractors, as well as more stringent requirements to hire outside consultants.

6. Shared Asset Allocation

Q. WHAT IS SHARED ASSET ALLOCATION?

A. This category reflects the allocation of Technology Services costs to or from the NSPM operating company, depending on where the asset was purchased and how an investment will be utilized between Xcel Energy operating companies. The dollars associated with this category are, in a sense, a true-up of costs related to a certain investment by assigning to the appropriate jurisdiction(s). This number fluctuates in part on the basis of the jurisdiction in which an investment is purchased, consistent with our capital asset and cost allocation policies discussed by Company witness A. Johnson and Company witness Nicole L. Doyle. For example, the dollars in this account will decrease when an asset is purchased in NSPM but is also utilized in other operating companies.

Q. WHAT SHARED ASSET ALLOCATIONS CHANGES DO YOU ANTICIPATE FOR THE 2024 TEST YEAR?

A. For 2024, the budget is $2.7 million, increasing from 2023.

7. Hardware Purchases and Maintenance

Q. WHAT IS INCLUDED IN THE HARDWARE PURCHASES AND MAINTENANCE CATEGORY?

A. Our hardware maintenance costs relate largely to vendor contracts we maintain to support hardware systems. This cost category also includes miscellaneous hardware equipment purchases for materials such as batteries, memory cards, keyboards, headsets, and related technical tools.

Q. WHAT HARDWARE PURCHASES AND MAINTENANCE COST CHANGES DO YOU ANTICIPATE FOR THE 2024 TEST YEAR?

A. Costs for this category are expected to fluctuate based on the work being performed and are budgeted for $0.2 million in 2024. In comparison to 2023, the 2024 budget has decreased by roughly 28 percent, mainly due to work optimization and resource management.

8. Other

Q. WHAT COSTS REMAIN IN THE "OTHER" CATEGORY?

A. This category includes very small purchases for administrative materials, distributed systems services, employee expenses, Mainframe, dues, fleet chargeback expenses, and internal building moves.

Q. WHAT IS THE BUDGETED AMOUNT FOR "OTHER" FOR THE 2024 TEST YEAR?

A. Costs in this category are $0.2 million in 2024.

Q. WHAT DO YOU CONCLUDE ABOUT TECHNOLOGY SERVICE'S O&M COSTS OVERALL?

A. We have worked diligently in recent years to carefully manage and contain O&M costs, which is reflected in the number of O&M categories with flat expense levels and budgets between past and future years. Where costs are rising, this is primarily due to increased investment in capital, and therefore an increased need for software maintenance and support. As such, our O&M cost levels reflect prudent management, cost containment, and reflects a reasonable amount for the 2024 test year.

V. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. I recommend that the Commission approve the Technology Services capital and O&M budget presented in this rate case. Our planned capital investments are managed appropriately and established to address aging technology, cyber security, customer experience, enhanced capabilities, and emerging demand for the Company. The budgets we propose are a reasonable representation of the activities we will undertake on behalf of the Company and ultimately our service to customers through 2024 and beyond.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

MICHAEL OWEN REMINGTON

414 Nicollet Mall, Minneapolis, MN 55401

PROFESSIONAL EXPERIENCE

Director, Application Managed Services (February 1 2021 to present)

- Responsible for managing contractual relationship with the company's AMS provider, as well as their performance toward contractual and business requirements.
- Sworn witness for IT business unit in rate cases, riders, and other filings across several jurisdictions.

Director, IT Operations, Xcel Energy, Minneapolis, MN (July 2019 to January 31 2021)

- Accountable for IT service management, critical incident management, disaster recovery, enterprise monitoring, and regulatory compliance.
- Led four managers and an organization of 30 employees.
- Team managed 9,000 IT change requests and 140,000 IT service requests per year; 55,000 device monitors in place, 70 support team referrals per day, and over 1,000 incidents per year resolved prior to an outage.
- Sworn witness for Texas and New Mexico rate cases.

Senior Business Manager, Xcel Energy, Minneapolis, MN (July 2008 to June 2019) (interim assignment below)

- Critical incident manager (on-call rotation): Responsible for representing business and customer interests during technology-related outages or situations of elevated risk.
- Led a team responsible for IT service processes (Problem, Change, Request, and Asset Management).
- Led implementation of a single-pane-of-glass service request portal and automated request fulfillment.
- Drafted effective testimony and discovery responses in support of nine public utility rate cases in three jurisdictions.

Attorney and Solutions Consultant, Xcel Energy, Minneapolis, MN (November 2013 to December 2014)

- A one-year assignment to the General Counsel and Legal Services organization, dotted line report to the Deputy General Counsel.
- Built a constructive relationship between IT and Legal Services. Provided IT leadership with a better understanding of the unique business requirements of in-house corporate counsel.
- Legal practice included transactional work and investigations of whistleblower & EEOC complaints.
- Led the successful implementation of an Early Case Assessment tool (Autonomy Investigator/ECA).

Systems Analyst, IBM Global Services, Minneapolis, MN (October 2000 to July 2008)

- Liaison between the business customers and the IT organization, focusing on the evaluation, selection, architectural design, and implementation of new business applications.
- Received top ratings from both customers and supervising managers.

EDUCATION

- Juris Doctor, *Magna Cum Laude*, Mitchell Hamline School of Law, St. Paul MN (May 2011)
- Certificate in Dispute Resolution, Hamline University School of Law
- Bachelor of Arts, Political Science, University of Minnesota, Minneapolis MN

PRESENTATIONS

- *Information Technology Transactions: Lessons Learned from Real World Cases*, Nov 4, 2019, Minnesota CLE Tech Law Institute (with Michael R. Cohen)
- *Critical Infrastructure Protection - Cyber Security and the Bulk Electric System*, Feb 12, 2019, Minnesota State Bar Association
- *Tailoring Enterprise Incident Management for CIP Compliance*, May 25, 2017, Mid-Continent Compliance Forum

OTHER QUALIFICATIONS, EXPERIENCE AND VOLUNTEERISM

- Licensed Minnesota attorney #0392425
- Minnesota State Bar Association (MSBA):
  - Chair, Technology Committee (2015 to 2018)
  - Council member, Tech Law Section (2018 to 2023)
  - Council member, Public Utilities Section (2021 to present)
- Associate Editor, Hamline Law Review (predecessor of Mitchell-Hamline Scholl of Law)
- Board member, Friends of Saint Paul College Foundation (current)
- Board member, BestPrep (current)

Schedule 2
Capital Investment Additions

MN Gas Witness (see note)	Remington
Item Desc	CWIP Closings

Sum of MN Allocated			Activity Year				
Major Category	**Project ID**	**Testimony Name**	**2020**	**2021**	**2022**	**2023**	**2024**
Aging Technology	**D.0001726.055**	Work and Asset Ph 1	67	(14)	(81)		
	D.0001744.016	IrthNet Damage Prevention Project				42	
	D.0001768.004	Enterprise Purge_Archive	(21,433)				
	D.0001783.004	NSP- MN System Replacement	(27,022)	(511)			
	D.0001783.024	NSP- MN System Replacement	(16,757)	824			
	D.0001792.166	Corporate Email Refresh	(4)				
	D.0001796.011	Smallworld LNI-PNI		(16)		30	
	D.0001801.001	Gas SCADA Replacement Project	26,323				
	D.0001804.054	Wireless Project	(666)				
	D.0001804.293	eSOMS Project				28	
	D.0001804.355	CIP Substation Compliance Reporting Work Stream 2				(694,883)	
	D.0001804.394	Wireless Project	(27)				
	D.0001804.399	Wireless Project	(332)		70		
	D.0001805.001	Next Generation Desktop			(277)		
	D.0001805.013	Next Generation Desktop	(169,164)	30,318	263	199	
	D.0001805.017	Next Generation Desktop	(123,636)	(5,836)			
	D.0001821.123	Annual Refresh	(373)				
	D.0001821.182	Annual Refresh	(10)				
	D.0001821.275	Annual Refresh	(1)				
	D.0001822.002	T&D MPLS - Unplanned	(151)				
	D.0001826.188	Demand Response Management System Replacement PROJECT			2	(3)	
	D.0001839.020	Annual Refresh	(100)				
	D.0001839.052	Annual Refresh	(3)				
	D.0001839.107	Annual Refresh	(35)				
	D.0001839.174	2017 Corp Network Infrastructure- Core Routing	133				
	D.0001839.177	Data Center Core Routing Switching Modernization and Streamlining	297				
	D.0001839.294	Active Directory Upgrade 2016	(133,890)	4,498			
	D.0001839.354	Windows 2003 Server Upgrade	175				
	D.0001839.598	Annual Refresh	(7)				
	D.0001839.789	2016 Websphere ELA Extension-Project	(2)				
	D.0001839.862	Active Directory Upgrade 2016	(14,743)				
	D.0001840.035	VoIP Refresh 2017-2020				1,551	
	D.0001840.104	Data Center Cooling and Power Remediation	15				
	D.0002003.007	2018 Oracle License			(1,387)		
	D.0002011.001	WAN NSPMN	(4,273)				
	D.0002011.004	WAN NSPMN	(13,035)				
	D.0002011.005	WAN NSPMN	(2,156)				
	D.0002011.006	WAN NSPMN	(1,821)				
	D.0002011.007	WAN NSPMN	(92,423)	(8,567)			
	D.0002011.008	WAN NSPMN		(107,337)	(2,568)		
	D.0002011.011	WAN NSPMN			(59,408)		
	D.0002011.013	WAN NSPMN	(60,276)	(110,793)	(126,952)	(139,899)	(118,117)
	D.0002018.001	10G Backhaul	(2,283)				
	D.0002020.001	SAP Continuous Improvements	(287)				
	D.0002020.015	SAP Continuous Improvements					(87,548)
	D.0002020.019	SAP Continuous Improvements		(73,172)			
	D.0002020.025	SAP Continuous Improvements	(10,694)		(3,648)		
	D.0002020.031	SAP Continuous Improvements		(172,714)	(13,946)		
	D.0002020.039	SAP Continuous Improvements		(13,380)	(146)		
	D.0002020.043	SAP Continuous Improvements			(13,321)	(48)	
	D.0002020.049	SAP Continuous Improvements		(26,674)	(7,468)		
	D.0002021.001	Facility IT Investments	(43,304)		(34,971)	2	
	D.0002021.005	Facility IT Investments	(415)				
	D.0002032.006	Cash Management System Replacement			(118,401)		
	D.0002033.008	Commodity Management System Upgrade	(18)				
	D.0002041.001	eGRC Phase IV - SOx and Corp Compliance		(58,266)	(419)		
	D.0002041.013	eGRC Phase IV - SOx and Corp Compliance		(17,919)	(20)		
	D.0002043.001	Enterprise Learning Upgrade	(6)				
	D.0002044.001	Enterprise Metadata Management					(94,034)
	D.0002052.001	Gas Transaction System	(1,526)				
	D.0002068.001	PowerPlan App Upgrade 2018	(5,438)				
	D.0002068.007	PowerPlan App Upgrade 2018	(4,582)	(4)			
	D.0002072.001	Replace Meeting Planner	(171)		(1)		
	D.0002076.001	Tapeless Data Center	(1,239)				
	D.0002082.001	Video Conferencing Enablement					(88,665)
	D.0002082.006	Video Conferencing Enablement	(13,542)	(128)			
	D.0002082.015	Video Conferencing Enablement		(62,309)	(19,458)	(1,181)	
	D.0002083.005	Windows Server OS Refresh	(70,501)	(27,062)	(1,077)		
	D.0002083.009	Windows Server OS Refresh	(2,878)	(209)			
	D.0002084.008	Software Asset Management	(93,036)	(5,853)			
	D.0002085.005	2017 Landworks Refresh			(39,105)	(798)	
	D.0002086.001	2022 Remittance Software Refresh				(39,969)	(6,248)
	D.0002106.001	VoIP Refresh				(32,321)	(107,522)
	D.0002106.005	VoIP Refresh		(36,924)	(3,136)		

Sum of MN Allocated			Activity Year				
Major Category	Project ID	Testimony Name	2020	2021	2022	2023	2024
	D.0002109.005	Rugged Tablets Refresh		(39,113)	(24,184)	(11,468)	(7,541)
	D.0002124.005	Gas Transmission Risk (GTR) Calc			(222,854)		
	D.0002125.005	DR Technology Refresh		(232,800)	(2,049)		
	D.0002125.009	DR Technology Refresh			2		
	D.0002125.013	DR Technology Refresh		(41,414)	(4,867)		
	D.0002125.017	DR Technology Refresh		(17,468)	(2,275)		
	D.0002126.006	Site Scope and BSM Replacement	(2)				
	D.0002133.006	Business Objects - Refresh		(29,114)	(2,127)		
	D.0002143.001	Technology License 2019	(43)		(676)		
	D.0002148.009	Annual Refresh	(9,733)				
	D.0002148.015	Annual Refresh	(22,660)	(776)			
	D.0002150.005	Technology License 2020	(19,194)	(28)			
	D.0002150.010	Technology License 2020	(312,582)	(85)			
	D.0002153.001	Technology License				(20,492)	
	D.0002153.005	Technology License		(154,099)	(5,162)		
	D.0002161.001	OSI Soft PI Enterprise Agreement				(37,364)	
	D.0002166.004	SumTotal Upgrade	(15,467)				
	D.0002169.007	Teradata-Hadoop HW Purchase		(54,992)	(0)		
	D.0002190.001	2019 Handheld Mobile Collector Refresh	(1,220)				
	D.0002192.001	Annual Refresh	(40,658)	706			
	D.0002192.012	Annual Refresh	(286,240)	(6,930)			
	D.0002193.001	Annual Refresh	(794)				
	D.0002193.005	Annual Refresh	(6,022)				
	D.0002194.001	Annual Refresh	(88,215)	(429)			
	D.0002194.005	Annual Refresh	(1,070)				
	D.0002194.011	Annual Refresh	(6,279)				
	D.0002194.012	Annual Refresh	(23,926)				
	D.0002194.016	Annual Refresh	(8,565)	13			
	D.0002195.001	Annual Refresh	(3,792)				
	D.0002195.009	Annual Refresh	(57,509)	(1,137)			
	D.0002203.005	PTT Mobile Device Refresh	(301)				
	D.0002210.001	Annual Refresh	(24,149)	(634)			
	D.0002210.005	Annual Refresh	(194,806)	(2,535)			
	D.0002210.011	Annual Refresh	(60,897)	(4,242)			
	D.0002210.016	Annual Refresh		(7,814)			
	D.0002210.020	Annual Refresh		(66,477)	(5,931)		
	D.0002211.005	Annual Refresh	(92,994)	(31)			
	D.0002211.014	Annual Refresh	(51,888)	(2,740)			
	D.0002212.005	Annual Refresh		(109,693)			
	D.0002213.001	Annual Refresh	(234,753)	(7,023)	(11)		
	D.0002225.009	Data Center Refresh	(6,387)	(1,358)	(24)		
	D.0002240.002	Core HR Application (Payroll Benefits)				(353,574)	
	D.0002240.006	Core HR Application (Payroll Benefits)				(1,728,565)	
	D.0002240.014	Core HR Application (Payroll Benefits)			(351,490)	(57,469)	
	D.0002245.003	AutoSys Refresh 2019	(18,835)	(15)			
	D.0002245.007	AutoSys Refresh 2019	(1)				
	D.0002252.003	Strategist Replacement	(1,046)				
	D.0002261.001	2021 Oracle Licenses		(148,525)			
	D.0002262.001	Real Property Asset Management Upgrade or Replace				(65,355)	
	D.0002265.001	2020 Oracle Licenses	(160,235)		(2,804)		
	D.0002270.001	eSOMS Project	(8,870)				
	D.0002279.001	Upgrade Project Pro, Visio, & Adobe Pro	(37)				
	D.0002281.001	NSP- MN System Replacement	(4,471)	(58)			
	D.0002281.002	NSP- MN System Replacement	(7,927)				
	D.0002282.001	Mainframe Modernization	(87,303)				
	D.0002282.007	Mainframe Modernization			(39,922)		
	D.0002284.001	Emptoris Contract Management Replacement		(108,646)			
	D.0002286.001	PI for Wind farms		(2)			
	D.0002287.001	EasyPower license increase purchase	(4,554)				
	D.0002290.001	Field Collection System (FCS) Upgrade 2.7 to 4.X	(5,615)	(582)			
	D.0002291.003	Gentran Upgrade		(9,847)			
	D.0002294.001	UI FMS Stabilization		(28,279)			
	D.0002294.005	UI FMS Stabilization		(3,399)			
	D.0002295.001	Feature Manipulation Engine Upgrade	(6,890)				
	D.0002297.001	Upgrade XpressRequest	(44,068)	(3,553)			
	D.0002301.001	Gas Plant SCADA Replacement			(1,835,865)	(26,718)	
	D.0002301.002	Gas Plant SCADA Replacement			(381,163)	(21,569)	
	D.0002301.003	Gas Plant SCADA Replacement			(296,609)	(21,569)	
	D.0002305.001	Primavera Upgrade		(29,724)			
	D.0002307.001	Unifier Upgrade	(19,191)	(1,556)			
	D.0002308.001	Bentley OpenUtilities Designer (BUD) Upgrade			(316,320)	(2,350)	
	D.0002308.008	Bentley OpenUtilities Designer (BUD) Upgrade			(14,016)		
	D.0002309.001	MRAS Upgrade to 64 Bit Operating System		(23,273)			
	D.0002314.001	PowerPlan App Upgrade 2018	(8)				
	D.0002320.001	VDI Refresh		(2,200)			
	D.0002320.003	VDI Refresh		(33,337)			
	D.0002320.012	VDI Refresh				(93,242)	
	D.0002320.018	VDI Refresh				(149,669)	
	D.0002329.001	Upgrade Corporate Financial Model (CFM)		(839)			
	D.0002329.003	Upgrade Corporate Financial Model (CFM)		(124,673)	(1,451)		
	D.0002340.001	Oracle Exadata Refresh			(147,936)		
	D.0002340.008	Oracle Exadata Refresh		(123,789)			

Sum of MN Allocated			Activity Year				
Major Category	Project ID	Testimony Name	2020	2021	2022	2023	2024
	D.0002345.001	Fleet Parts Management		(6,085)			
	D.0002346.003	Legal Hold Custodian Management	(10,230)	(3,377)			
	D.0002353.015	Adobe Flash Remediation	(33)				
	D.0002353.019	Adobe Flash Remediation	(76)				
	D.0002353.023	Adobe Flash Remediation	(16,592)	(388)			
	D.0002353.027	Adobe Flash Remediation	(14,235)	(118)			
	D.0002353.035	Adobe Flash Remediation	(4,634)	(1,243)			
	D.0002353.039	Adobe Flash Remediation	(1,091)	(89)			
	D.0002353.043	Adobe Flash Remediation	(6)				
	D.0002353.047	Adobe Flash Remediation		(1,619)			
	D.0002354.001	Lifecycle Management (LFCM) Projects	(234,380)	(205,438)	(176,494)	(240,909)	(94,110)
	D.0002355.001	Lifecycle Management (LFCM) Projects	(10,159)	(10,553)	(46,460)	(41,492)	(46,331)
	D.0002356.001	Annual Refresh		(98,373)	(103,582)	(104,225)	
	D.0002366.003	ServiceNow		(399,107)	(1,926)		
	D.0002370.003	F5 Renewal		(55,817)	(3,943)		
	D.0002370.007	F5 Renewal		(190,624)			
	D.0002372.003	Oracle Java 3 licensing 3 year	(65,330)				
	D.0002373.001	Motorola LMR Core Upgrade				(122,004)	
	D.0002373.005	Motorola LMR Core Upgrade		(142,797)			
	D.0002376.001	Infrastructure Modernization		(17,182)	(3,725)		(60,327)
	D.0002376.004	Infrastructure Modernization			(90,379)	(280)	
	D.0002376.005	Infrastructure Modernization		(9,181)			
	D.0002376.015	Infrastructure Modernization			(7,861)		
	D.0002378.003	O365 Email Legal Hold			(41,089)	(1,774)	
	D.0002381.003	Gas Transactional System (GTS) - 2020		(253,324)			
	D.0002385.003	Rational License Purchase 2020	(67,354)	(73)			
	D.0002386.001	Ansible Automation and Licensing	(106,977)				
	D.0002401.001	Aclara Upgrade			(8,114)		
	D.0002409.003	Integration Resiliency		(123,213)	(44,230)		
	D.0002450.003	Multi-State Customer Refund Engine				(38,145)	(1,718)
	D.0002456.001	Distribution and Gas Capital Planning				(1,104)	
	D.0002462.003	MV90xi to IEE Conversion					(51,239)
	D.0002469.003	BI Environment refresh			(4,622)	(67)	
	D.0002473.001	Exemption Certificate Management				(31,096)	(1,683)
	D.0002482.005	Lifecycle Management (LFCM) Projects		(42,394)	(84,570)	(95,693)	(67,868)
	D.0002488.005	Lifecycle Management (LFCM) Projects		(18,756)	(108,059)	(141,310)	(156,850)
	D.0002489.005	Lifecycle Management (LFCM) Projects			(37,181)	(101,097)	(108,589)
	D.0002500.001	Fabric Refresh			(155,812)	(14,515)	
	D.0002301.008	Gas Plant SCADA Replacement			(6,503,411)	(971,473)	
	D.0001850.001	Network Security Orchestrator			(251,175)	(9,687)	
	D.0002386.007	Ansible Automation and Licensing			(150,139)		
	D.0002409.007	Integration Resiliency			(39,766)	(3,580)	
	D.0002485.005	Lifecycle Management (LFCM) Projects			(181,688)	(338,795)	
	D.0002485.015	Lifecycle Management (LFCM) Projects			(20,425)	(3,665)	
	D.0002485.021	Lifecycle Management (LFCM) Projects			(124,481)	(2,202)	
	D.0002517.001	SD-WAN Implementation			(92,337)	(11,473)	
	D.0002517.005	SD-WAN Implementation			(130,577)	(17,212)	
	D.0002518.001	Lifecycle Management (LFCM) Projects			(305,739)	(228,850)	(144,785)
	D.0002106.014	VoIP Refresh			(1,145,303)	(64,930)	
	D.0002301.010	Gas Plant SCADA Replacement			(14,509)		
	D.0002301.011	Gas Plant SCADA Replacement			(11,624)		
	D.0001826.363	Microsoft Core Server Licensing			(40)		
	D.0001850.007	Network Security Orchestrator				(232)	
	D.0001856.001	Monitoring Device Management System (MDMS) Replacement				(711,821)	
	D.0001977.003	Automation Capability Enablement (ACE)			(22,538)	(1,483)	
	D.0001988.003	Archer Enhancements			(23,919)	(58,255)	
	D.0002003.001	2017 Oracle Licenses			(996)		
	D.0002011.016	WAN NSPMN			(13,517)	114	
	D.0002011.018	WAN NSPMN					(2,713)
	D.0002020.051	SAP Continuous Improvements			(87,794)	(24,810)	
	D.0002020.057	SAP Continuous Improvements				(6,812)	
	D.0002021.017	Facility IT Investments					(14,626)
	D.0002021.021	Facility IT Investments					(41,781)
	D.0002021.037	Facility IT Investments					(14,599)
	D.0002054.006	GOLD Replacement				(463,667)	
	D.0002082.019	Video Conferencing Enablement			(74,418)	(31,890)	
	D.0002125.029	DR Technology Refresh				(59,229)	
	D.0002125.035	DR Technology Refresh			(160,237)	(19,082)	(84,475)
	D.0002125.037	DR Technology Refresh				(16,456)	
	D.0002153.011	Technology License			(132,727)	(14,907)	
	D.0002153.017	Technology License			(372,086)	(408)	
	D.0002286.021	PI For DC5 Electric				(8,273)	
	D.0002356.011	Annual Refresh				(25,907)	
	D.0002373.016	Motorola LMR Core Upgrade			(1)		
	D.0002376.027	Infrastructure Modernization				(33,388)	
	D.0002376.031	Infrastructure Modernization			(4)		
	D.0002376.037	Infrastructure Modernization			(4)		
	D.0002376.043	Infrastructure Modernization				(131)	
	D.0002376.045	Infrastructure Modernization			(13,853)	(2,287)	
	D.0002376.047	Infrastructure Modernization			(30,563)		
	D.0002409.015	Integration Resiliency			(6,007)		
	D.0002438.007	Unified Data Platform				(17,956)	

Sum of MN Allocated			Activity Year				
Major Category	**Project ID**	**Testimony Name**	**2020**	**2021**	**2022**	**2023**	**2024**
	D.0002445.001	Powerplan Upgrade				(90,924)	
	D.0002469.007	BI Environment refresh				(7,080)	
	D.0002469.011	BI Environment refresh			(6,351)	(0)	
	D.0002501.005	Data Loss Prevention				(44,502)	
	D.0002512.019	ServiceNow Enhancements				(10,701)	
	D.0002520.009	Energy Demand and Load Forecasting				(206,398)	(3,998)
	D.0002532.003	Geospatial Data Lake			(106,123)	13,041	
	D.0001938.002	Enterprise Gas SCADA Upgrade Project					(321,009)
	D.0001938.004	Enterprise Gas SCADA Upgrade Project				(27,731)	(88)
	D.0001974.003	CIM Tool Cloud-Hosting and JANA Connect Upgrades					(62,761)
	D.0001987.003	Gas Transaction System (GTS) - Measurement					(1,518,927)
	D.0001987.007	Gas Transaction System (GTS) - Measurement					(9)
	D.0002301.012	Gas Plant SCADA Replacement					(1,160,768)
	D.0002301.016	Gas Plant SCADA Replacement					(119,951)
	D.0002301.017	Gas Plant SCADA Replacement					(1,138)
	D.0002301.018	Gas Plant SCADA Replacement					(30,133)
	D.0002547.003	Aspen HYSYS Modeling Software				(35,868)	
	D.0001917.001	LMR IP Enablement				(44,298)	(60,327)
	D.0001917.005	LMR IP Enablement				(16,009)	
	D.0001926.003	ESB Modernization					(471,670)
	D.0001926.007	ESB Modernization					(21,763)
	D.0001927.001	Marshall Operation Center - MOC				(593,385)	(32,609)
	D.0001935.003	Fleet Asset Upgrade				(10,575)	(2,126)
	D.0001939.003	SharePoint on-premises Upgrade					(21,127)
	D.0001941.003	Content Manager Upgrade or Replace				(8,925)	
	D.0001943.003	BlueBeam Upgrade				(13,571)	
	D.0001944.001	Handheld Mobile Collector Refresh				(59,122)	
	D.0001945.003	FCS Upgrade 3					(6,467)
	D.0001965.003	HANA Sidecar Reporting				(18,794)	
	D.0001994.063	SW License Renewals - Infrastructure				(888,739)	
	D.0002011.022	WAN NSPMN				(5,501)	
	D.0002020.071	SAP Continuous Improvements				(66,324)	
	D.0002020.077	SAP Continuous Improvements				(32,545)	
	D.0002020.085	SAP Continuous Improvements				(65,491)	
	D.0002021.023	Facility IT Investments				(2,807)	(2,105)
	D.0002021.050	Facility IT Investments					(1,305)
	D.0002044.008	Enterprise Metadata Management				(10,287)	
	D.0002082.027	Video Conferencing Enablement				(71,182)	
	D.0002106.029	VoIP Refresh				(129,325)	
	D.0002125.043	DR Technology Refresh				(26,719)	
	D.0002153.023	Technology License				(2,787,396)	
	D.0002299.003	Upgrade Facility Control System Application				(49,570)	
	D.0002376.049	Infrastructure Modernization				(2,763)	
	D.0002376.055	Infrastructure Modernization				(7,343)	
	D.0002376.061	Infrastructure Modernization				(19,809)	
	D.0002402.007	iSeries Software Functionality				(34,998)	
	D.0002473.009	Exemption Certificate Management				(79)	
	D.0002485.001	Lifecycle Management (LFCM) Projects				(78,727)	(298,469)
	D.0002500.009	Fabric Refresh				(21)	
	D.0002500.015	Fabric Refresh				(2,001)	
	D.0002512.011	ServiceNow Enhancements				(18,825)	
	D.0002520.005	Energy Demand and Load Forecasting				(302)	
	D.0002541.001	AMI Headend-Exadata Storage				(100,343)	
	D.0002545.001	Software Asset Management Phase 2				(73)	
	D.0002545.005	Software Asset Management Phase 2				(23,410)	
	D.0002557.002	Utilisphere 5 Year Enterprise License Agreement				(118,223)	
Aging Technology Total			**(3,375,536)**	**(3,694,304)**	**(15,043,593)**	**(13,296,753)**	**(5,538,116)**
Customer	**D.0001792.149**	Enhanced Customer Outage Experience(aka XE.com Remediation)				50	
	D.0002037.022	Customer Service Console - Single Screen				6,342	
	D.0002137.006	CRS Tech Stack Upgrade			(150,548)	(737)	
	D.0002137.010	CRS Tech Stack Upgrade			(422,964)	(11,341)	
	D.0002186.003	2018 CRS Tech Stack Upgrade and Win 10	(79,946)	3,419			
	D.0002199.003	Voice Agent Project Idea		(28,082)	(47)		
	D.0002209.009	2020 Handheld Mobile Collector Refresh			(24,829)	(0)	
	D.0002209.015	2020 Handheld Mobile Collector Refresh		(839)	(11,535)	17	
	D.0002223.006	Customer Care IVR Upgrades				(645,988)	(66,453)
	D.0002223.012	Customer Care IVR Upgrades				(5,899)	
	D.0002247.003	My Account			(944,901)	161	
	D.0002248.003	XE.COM			(483,344)	548	
	D.0002249.003	Mobile App			(625,044)	1,394	
	D.0002250.003	Customer API Ph 1	(432,446)	(81,153)	(35,337)		
	D.0002250.011	Customer API Ph 2			(456,400)	(3,244)	
	D.0002251.003	Customer Data	(549,987)	(77,140)	(5,741)	(33)	
	D.0002251.007	Customer Data Ph 2			(377,712)	21	
	D.0002253.003	CIAM			(323,736)		
	D.0002253.007	Customer Identity Access Management				(16)	
	D.0002255.003	Contact Center	(3)		2		
	D.0002256.003	Analytics, AI, and NLU	(2)		2		
	D.0002273.003	Builder's Call	(397,544)	(57,504)	(9,190)		
	D.0002273.007	NCC Ph 2			(37,209)		
	D.0002300.001	Enterprise Purge Archive	(21,973)	(15,564)			
	D.0002300.009	Enterprise Purge Archive			(41,001)	371	

Sum of MN Allocated			Activity Year				
Major Category	**Project ID**	**Testimony Name**	**2020**	**2021**	**2022**	**2023**	**2024**
	D.0002389.003	Agent Console				(375,716)	
	D.0002390.001	Billing and Payments				(100)	
	D.0002392.001	Notifications				(1)	
	D.0002393.001	Outages				(3)	
	D.0001924.017	Energy and Utilities Cloud				(495,442)	
	D.0002247.009	MyAccount and Mobile App Enhancements			(99,475)	(535,220)	
	D.0002249.013	Text To Pay				(81,845)	
	D.0002522.003	Business Portal				(3,948)	
	D.0001924.013	Customer Experience Transformation Phase 3				(240,039)	(1,661,536)
Customer Total			**(1,481,901)**	**(256,864)**	**(4,049,010)**	**(2,390,668)**	**(1,727,988)**
Cyber Security	**D.0001771.004**	Certificate & Key Management				2,387	
	D.0001771.014	Certificate & Key Management			(124,013)	(1,571)	
	D.0001807.001	Emergent Demand-Security				(237,410)	(388,008)
	D.0001818.056	Structured Data Security Project (aka db Security)	(68)				
	D.0001818.067	Security Monitoring Center Project (aka Threat Mgmt)	(124)				
	D.0001818.110	SOC Expansion and Enterprise Resiliency Command Center	(8)				
	D.0001825.009	Enhanced Perimeter Security	(32)				
	D.0001825.089	Host Intrusion Prevention for Servers	(143,161)	(263)			
	D.0001839.782	Network Security and Protection		(7)			
	D.0001840.108	Security Camera Upgrade	(30,918)	19			
	D.0001840.130	Security Camera Upgrade	129	(124)		536	
	D.0002001.017	SailPoint Phase 4	(4,868)	107			
	D.0002008.009	Enterprise Database Security Phase II	(17)				
	D.0002008.015	Enterprise Database Security Phase II	(38,943)	(251)			
	D.0002008.019	Enterprise Database Security Phase II		(25,738)	158		
	D.0002098.001	Cyber Ark (Support and Services Account)			18	(12)	
	D.0002098.014	Cyber Ark (Support and Services Account)	(36,363)	(6,468)	2,309		
	D.0002098.018	Cyber Ark (Support and Services Account)	(5,694)				
	D.0002101.003	eGRC Enterprise Security - Ph 3	(9)				
	D.0002101.009	eGRC Enterprise Security - Ph 3	7				
	D.0002101.015	eGRC Enterprise Security - Ph 3	216				
	D.0002123.005	Security Camera Upgrade 2019	(14,414)	(0)			
	D.0002165.005	OT Monitoring 2019	(2,046)				
	D.0002165.008	OT Monitoring 2019	(578)				
	D.0002187.003	Cyber Security Data Lake		(86,995)			
	D.0002187.007	Cyber Security Data Lake		(12,879)			
	D.0002189.003	Virtual Emergency Operations Center (EOC)	(45,165)				
	D.0002200.003	Endpoint Privilege Manager	(2,954)				
	D.0002202.003	Multi-Factor Authentication - Initiation	(7,137)	124			
	D.0002206.003	Security Services Upgrade				(77,928)	
	D.0002206.007	Security Services Upgrade				(2,328)	
	D.0002257.001	Data Discovery	(3,277)				
	D.0002257.003	Data Discovery	(67,569)	230			
	D.0002268.002	Endpoint Security Suite	(15,198)				
	D.0002269.009	OT Shared Services				(60)	(0)
	D.0002269.011	OT Shared Services	(17,696)	(181)			
	D.0002269.017	OT Shared Services		(20,255)	(2,140)		
	D.0002276.001	Documentum 16.4 Upgrade			(70,636)	(743)	
	D.0002312.001	SailPoint Phase 5		(62,793)	(43)		
	D.0002313.001	Archer 2020		(17,503)			
	D.0002315.001	Multi-Factor Authentication - maturation	(25,560)	(370)			
	D.0002315.005	Multi-Factor Authentication - maturation				(7)	
	D.0002316.001	Cloud - SAST_DAST	(26,109)	73			
	D.0002317.001	Cloud Access Security Broker	(5,393)	(191)			
	D.0002326.001	Email Advanced Threat Protection	(236,547)	(468)			
	D.0002344.001	OT Monitoring 2020	(45,430)	(413)			
	D.0002344.005	OT Monitoring 2020	(6,156)	(16)			
	D.0002347.003	Risk Assessment as a Service			(75,194)	225	
	D.0002348.003	Upgrade Identity Manager		(55)			
	D.0002371.003	Vulnerability and Patch Management					(97,283)
	D.0002382.003	Axio Risk Dashboard				(76,317)	
	D.0002384.003	Analog Security Camera Upgrade		(48,242)	(49,136)	(43,228)	(7,541)
	D.0002410.003	Terrain Analytics				(130,375)	
	D.0002411.003	Deception Servers			(91,621)		
	D.0002413.003	SailPoint 2021			(494,502)	(2,120)	
	D.0002414.007	Multi-Factor Authentication - Maturation Phase 2		(39,570)	(888)		
	D.0002415.007	Socially-Engineered Attack Prevention		(49,033)	(2,617)		
	D.0002416.001	Verint Security Camera Server Replacement				(105,556)	
	D.0002417.001	Reprivata monitoring sensors			-	(86,728)	(18,531)
	D.0002418.001	SIEM+SOAR			(340,082)		
	D.0002419.001	Risk and Compliance Tool Buildout				(8,807)	
	D.0002486.001	Service Account Remediation				(108,949)	(9,940)
	D.0001845.003	PingFed to Azure SSO Migration				(100,563)	
	D.0002515.003	ITC - OT Monitoring 2021				(508,990)	
	D.0001991.003	Unix and Linux Access Control				(827,691)	(21,735)
	D.0001896.001	FireEye IDS-IPS				(117,171)	
	D.0001896.008	FireEye IDS-IPS				(44,385)	(8,913)
	D.0001897.001	Red Team Program Development				(1,582)	(0)
	D.0001897.010	Red Team Program Development					(44,310)
	D.0001898.001	Endpoint Detection and Response				(181,664)	
	D.0001914.003	Tanium Enforce and PWC Accelerators			(58,126)	9,249	
	D.0001993.003	Grideon Emergency Management					(25,299)

Sum of MN Allocated			Activity Year				
Major Category	**Project ID**	**Testimony Name**	**2020**	**2021**	**2022**	**2023**	**2024**
	D.0002413.008	SailPoint 2021			(100,585)	(50,194)	
	D.0002413.014	SailPoint 2021			(6,521)		
	D.0002417.007	Reprivata monitoring sensors			-	(2,415)	
	D.0002418.007	SIEM+SOAR			(11,696)	(10,741)	
	D.0002418.015	SIEM+SOAR				(9,272)	(4,695)
	D.0002552.001	Full Packet Capture					(13,574)
Cyber Security Total			**(781,082)**	**(371,262)**	**(1,425,314)**	**(2,724,409)**	**(639,828)**
Emergent Demand	**D.0002059.001**	Emergent Demand - Foundational Capabilities				(20,418)	(410,795)
	D.0002061.001	Emergent Demand - Core System Modernization					(368,879)
Emergent Demand Total						**(20,418)**	**(779,674)**
Enhance Capabilities	**D.0001787.011**	PTT Phase 3 (WAM)	(7,689)				
	D.0001787.018	PTT Phase 3 (WAM)	(34,187)				
	D.0001796.022	Network Inventory and Planning Solution	(34)				
	D.0001796.031	Network Inventory and Planning Solution	(99)		(1)	11	
	D.0001796.053	Telecom Expense Management	(100,775)				
	D.0001804.390	eSOMS Project	(1,403)		233	(110)	
	D.0001839.183	Mobile Computing Infrastructure			(40)		
	D.0001839.625	ESB Environment Refresh	(2,483)			64	
	D.0002045.012	Enterprise Operational Monitoring	(8,578)	(1,974)	(581)		
	D.0002073.006	Safety Observations & Predictive Analytics		(22,057)	(149)		
	D.0002074.006	Enterprise Data Management Tool				(244,622)	
	D.0002084.017	TRIRIGA Mobile		(21)			
	D.0002090.001	IT Service Request Automation	(44)				
	D.0002090.010	IT Service Request Automation	(23)				
	D.0002100.011	Basic Private Cloud Services				310	
	D.0002100.028	Basic Private Cloud Services	108				
	D.0002113.006	Purchase Power Agreement Contract Management		(34,096)	(1,473)		
	D.0002131.001	OSI PI Environment Refresh					(6,094)
	D.0002135.001	UNIX Configuration Manager	(115)	(6)			
	D.0002180.018	Transmission Asset Health Analytics		(269,950)			
	D.0002181.003	Strategic Fiber Deployment		6			
	D.0002181.005	Strategic Fiber Deployment				(1,463,198)	
	D.0002181.007	Strategic Fiber Deployment				(0)	(30,164)
	D.0002185.003	Network Automation Platform Implementation	(105,465)		315	(213)	
	D.0002205.003	Customer Mobile App Accessibility	(6,102)				
	D.0002254.003	RPA Release	(22,447)				
	D.0002254.013	RPA Release	(32,557)	(1,131)			
	D.0002254.018	RPA Release		(134,368)	(6,153)		
	D.0002275.001	PI Data Integrations	(14,704)				
	D.0002277.003	Crew Time Entry App	(35,919)	(3,086)	(79)	(34)	
	D.0002277.009	Work and Asset Ph 1				(604,060)	
	D.0002277.013	EXT Time Entry App				(5,739)	
	D.0002283.001	Avaya Cloud Voice Deployment		(42,285)	(1,525)		
	D.0002283.009	Avaya Cloud Voice Deployment		(645,894)	(3,676)		
	D.0002285.001	General Counsel Document Management	(59,696)	(3,215)			
	D.0002310.001	UI CREV and RIS with PlannerDash		(117,266)			
	D.0002310.006	UI CREV and RIS with PlannerDash		(1)			
	D.0002310.010	UI CREV and RIS with PlannerDash		(3,134)			
	D.0002322.003	Outage Employee Experience		(208,455)	12,426	22	
	D.0002363.002	Data Science Models		(43,692)			
	D.0002363.006	Distribution and Gas Data Science			(51,235)		
	D.0002363.013	Res Data Science Models		(13,000)	(17,387)		
	D.0002364.003	Business Systems Resiliency Project	(104,959)		(134)	(1)	
	D.0002365.005	Application Performance Monitoring		(162,562)			
	D.0002367.001	Kafka Data Streaming		(256,125)	(2,916)		
	D.0002368.001	Propensity To Pay	(6,328)				
	D.0002369.001	Blue Prism Licenses	(7,220)				
	D.0002369.007	Blue Prism Licenses	(2,283)	(1)			
	D.0002379.003	Gas Estimation Tool (GET)			(191,117)		
	D.0002380.003	Fleet Capital Asset Management (CAM)			(23,178)		
	D.0002383.003	Distributed Intelligence				(20,024)	
	D.0002395.007	Digital Ops Factory		(755,237)	(148,459)	793	
	D.0002396.049	FERC Cost Traceability Process Improvement	261,104	82,310	58,038		
	D.0002396.051	FERC Cost Traceability Process Improvement	897				
	D.0002399.019	QR Code				(6,679)	
	D.0002402.003	iSeries Software Functionality			(53,842)	(1,446)	
	D.0002429.001	Return to Office Remediation		(79,619)	(12,550)		
	D.0002430.003	Real Time Scheduling Engine			(647,345)	(82,253)	
	D.0002443.003	Gas Frontline Enablement and Experience			(3,115,286)	(1,334,521)	
	D.0002446.001	Supply Chain Procure to Pay				(37,543)	(30,480)
	D.0002465.002	Field Modem Management				(10,931)	
	D.0002465.003	Field Modem Management				(12,890)	
	D.0002466.001	eSOMS Upgrade			(46,760)	(3,634)	
	D.0002496.003	Kafka Expansion					(151,812)
	D.0002512.001	ServiceNow Enhancements			(215,290)	(53,000)	
	D.0001833.003	SAP Solution Manager Cap - NSPM				(329)	
	D.0002298.010	Unmanned Aircraft Systems Program			(107,239)	(12,863)	(19,191)
	D.0002298.016	Unmanned Aircraft Systems Program			(89,761)		
	D.0002429.015	Return to Office Remediation		(7,813)	(2,930)		
	D.0002429.021	Return to Office Remediation		(18,747)	(152)		
	D.0002429.029	Return to Office Remediation		(27,623)			
	D.0002363.029	Dist/Gas Data Science Phs2 NSPM				(23,191)	

Sum of MN Allocated			Activity Year				
Major Category	**Project ID**	**Testimony Name**	**2020**	**2021**	**2022**	**2023**	**2024**
	D.0002254.023	RPA Release			(116,031)	(2,454)	
	D.0001919.003	Gas Emergency Respond - EXT			(1,031,309)	(369,764)	
	D.0001895.005	SAP ADR to Capital				(5,645)	
	D.0001895.009	SAP ADR to Capital			(5,658)	(3,591)	
	D.0001895.013	SAP ADR to Capital			(20,058)	(15,849)	
	D.0001895.019	SAP ADR to Capital			(16,964)	(13,218)	
	D.0001895.023	SAP ADR to Capital				(21,409)	
	D.0001916.003	Private LTE					(596,668)
	D.0001916.019	Private LTE				(1,798,357)	(864,620)
	D.0001940.007	End User Services Enhancements			(34,443)	(39,540)	
	D.0001946.005	Network App Services Enhancements			(7,062)	(4,563)	
	D.0001948.005	Route and Switch Enhancements			(51,000)	(4,663)	
	D.0001968.007	Network Transport Enhancements			(1,500)	(14,466)	
	D.0002446.005	Supply Chain Procure to Pay				(210,431)	
	D.0002492.007	Employee Digital Experience Intranet Platform				(104,566)	(2,319)
	D.0002521.003	Application Maturity Model				(35,932)	
	D.0002535.005	Cyber-Recovery Solution				(173,707)	(2,388)
	D.0002254.028	RPA Release				(50,233)	
	D.0002363.036	Data Science - Cust 2023 NSPM				(305)	
	D.0001895.039	SAP ADR to Capital				(10,601)	
	D.0001916.011	Private LTE					(394,574)
	D.0001940.003	End User Services Enhancements					(102,901)
	D.0001947.001	Network Voice Enhancements					(61,601)
	D.0001948.001	Route and Switch Enhancements					(12,265)
	D.0001964.003	Network Security Services Enhancements					(29,472)
	D.0001968.003	Network Transport Enhancements					(14,939)
	D.0002298.023	Unmanned Aircraft Systems Program					(17,634)
	D.0002298.029	Unmanned Aircraft Systems Program					(81,117)
	D.0002298.041	Unmanned Aircraft Systems Program					(6,687)
	D.0002375.001	Bundle for Mobility					(9,049)
	D.0002427.016	Energy Supply APM Phase 2				(68,245)	(8,585)
	D.0002438.013	Unified Data Platform				(27,180)	
	D.0002535.001	Cyber-Recovery Solution				(5,977)	
	D.0002546.003	Strategic Portfolio Management (SPM) in ServiceNow				(130,566)	(4,215)
	D.0002549.011	Smallworld ADR to Capital				(19,724)	
	D.0002551.007	ESRI ADR to Capital				(17,986)	
Enhance Capabilities Total			**(291,002)**	**(2,769,041)**	**(5,952,268)**	**(7,065,053)**	**(2,446,773)**
Grand Total			**(5,929,522)**	**(7,091,471)**	**(26,470,185)**	**(25,497,301)**	**(11,132,380)**

Project Budgeting and Development: Technology Investment Governance Process

A. Initial project budget development

Technology Services' budget development, project prioritization, and project management is facilitated through the Technology Investment Governance (TIG) process. TIG leadership is comprised of senior business area and IT leaders. As part of the TIG process, business and IT leaders are accountable for managing demand intake, prioritization, and business outcomes of the IT projects in their portfolios as they move from project inception towards in-service, thereby ensuring that projects comply with IT portfolio and project management requirements. IT works with each business area to determine its specific IT needs, and then these needs are prioritized based on a particular set of factors. Specifically, each Technology Services area is responsible for partnering with a specific business area within the organization to determine that area's long-term strategic objectives and determine if an IT investment is needed to enable achievement of those objectives. Once a technology need is confirmed, an idea is developed to further refine the scope, associated costs and timeline. Ideas from across the business are gathered and prioritized by TIG leaders, with consideration for expected business outcomes along with budget and resource constraints. The output of these prioritization efforts is the Technology Services budget. The TIG process also oversees and approves any changes in project scope or budget at the corporate level based on overall Company priorities and spending levels.

B. Converting project ideas into the Technology Services budget

From the idea stage, project ideas are grouped and evaluated, ranked, and selected based on a common set of filters. This process weighs a multitude of criteria including: (1) the financial and non-financial benefits of a project; (2) the potential for other existing

technologies to address the business need; and (3) the degree to which the project is needed to meet regulatory requirements or to ensure system reliability and security. This categorization process allows Technology Services to evaluate the benefits and risks associated with each project idea, and results in a list of ranked project ideas.

C. The next step after the project ideas are ranked

Under the TIG process, the Company reviews the ranked project ideas to determine which projects should be implemented and included in the Technology Services budget. This process requires further refinement of the budget figures for each project, and prioritization of possible projects until a final budget is set.

D. How projects are governed once approved for inclusion in the budget

Technology Services employs a "gated" approval process called the "Governance Gates Process" to oversee IT projects throughout their lifecycle. Projects move through specific gates or approvals under the TIG process. The Governance Gates Process enables regular review of project metrics (schedule, scope, deliverables), and institutes corrective action plans or modifications as appropriate.

E. The different gates or approvals that are part of the Governance Gates Process

The five gates that each capital project must complete before it is initiated and ultimately placed in service are as follows: (1) Approval to Initiate; (2) Alignment to Design; (3) Alignment to Build; (4) Alignment to Launch; and (5) and Project Closure.

Gate 1: Approval to Initiate

Once a project is approved into the budget by TIG leaders, project teams

complete a set of deliverables to gain "Approval to Initiate," the first governance gate that represents the official start of the capital project. Deliverables at "Approval to Initiate" include a delivery checklist, a stakeholder identification and analysis, an official project plan, risk logs, and cost/schedule estimates.

Gate 2: Alignment to Design

The next gate is "Alignment to Design," The purpose of this gate is to validate project requirements, review refined budget and schedule estimates and begin development of technical plans. The "Alignment to Design" gate includes a technical review by the Architecture and Security teams to confirm that established design standards are followed.

Deliverables needed at the "Alignment to Design" gate include validated project requirements, a security risk assessment, documented Architecture Decisions, and refined project cost/schedule estimates.

Gate 3: Alignment to Build

The next gate is "Alignment to Build." The purpose of this gate is to review the project plan before construction begins to ensure that the proposed design meets the identified needs, known technical problems are resolved and the project is on track to meet its intended purpose.

At this gate, TIG and IT leaders confirm that the project remains on track to meet its stated objectives. Also, an architectural review is performed to ensure that the project technical design meets established standards and to confirm that known technical issues have been resolved. Additionally, a security risk assessment is conducted to ensure design plans meet cyber security standards. Once all requirements are completed at the "Alignment to Build." Gate, the

project team can begin to build and deploy the project.

Gate 4: Alignment to Launch

The next gate is "Alignment to Launch". This gate includes an architectural review to ensure the technology solution is ready to be placed in service. The business unit sponsoring the solution must also approve the project at this stage by confirming that that it meets the project objectives, and that the operational procedures and tools (such as user training) are in place to ensure its successful and secure operation in the production environment.

Gate 5: Project Closure

The final gate is "project closure." This gate is the formal close out of the project verifying the solution has been transitioned to operational steady state, decommissioning of any obsolete technologies and confirmation that project objectives were achieved.

Technology Services 2020-2024 O&M Budget by Category NSPM Gas					
Cost Element	**2020 Actuals**	**2021 Actuals**	**2022 Actuals**	**2023 Forecast**	**2024 Test Year**
Network Services	1,148,503	1,075,651	824,953	1,154,917	1,095,982
Software License & Maintenance	2,551,762	2,870,055	3,378,509	3,685,410	3,791,768
Company Labor	1,485,120	1,397,483	1,472,517	1,747,320	1,697,227
Application Development & Maintenance	1,607,857	1,555,877	1,314,282	747,887	708,062
Contract Labor/Consulting	667,962	414,146	844,841	611,598	536,250
Shared Assets Allocation	2,484,371	2,198,555	2,128,246	2,249,156	2,678,069
Hardware Purchases & Maintenance	176,249	327,204	256,849	326,428	235,530
Other	272,380	319,559	201,035	333,749	217,983
Total	**10,394,204**	**10,158,530**	**10,421,231**	**10,856,464**	**10,960,871**

*There may be differences between the sum of the individual category amounts and Total amounts due to rounding.

Technology Services O&M Costs by FERC Account Minnesota-Gas ($s in millions)					
FERC	**2020**	**2021**	**2022**	**2023**	**2024**
Account	**Actuals**	**Actuals**	**Actuals**	**Forecast**	**Test Year**
500	-	-	-	-	-
506	-	156	-	-	-
511	-	-	-	-	-
517	-	-	-	-	-
524	-	5,206	2,250,878	75,118	-
525	-	-	-	1	-
528	-	22,209	-	-	-
535	-	-	-	-	-
539	-	-	-	-	-
546	-	-	-	-	-
549	-	8,822	254	215	-
551	-	-	-	-	-
552	-	-	-	-	-
554	-	-	-	-	-
556	-	-	-	-	-
557	-	-	-	5,741	-
560	-	-	-	-	-
561.2	-	123,853	137,610	44,090	-
561.5	-	7,374	-	65,904	-
566	-	17	-	133,959	-
567	-	-	-	-	-
570	-	-	-	-	-
575.1	-	-	-	-	-
580	-	-	833	92,423	-
581	-	100,997	245,982	(32,187)	-
586	-	-	-	-	-
588	-	365,852	127,812	165,461	-
589	-	-	-	-	-
735	-	-	1	-	-
813	283,794	18	9	6,688	-
824	-	-	6	-	-
841	-	-	20	-	-
846.2	-	-	1	-	-
850	-	-	219	14,186	-
851	71,865	57,324	263,688	89,865	20,847
859	-	-	10,096	1,019	13,295
866	64	459,810	387,080	123,285	5
870	-	-	10,799	45,650	-

FERC Account	2020 Actuals	2021 Actuals	2022 Actuals	2023 Forecast	2024 Test Year
871	792,408	765,239	349,340	502,557	268,692
878	143	-	-	-	-
880	629,579	397,149	293,177	236,713	208,127
902	514,470	557,958	1,077,274	653,512	130,457
903	578,304	1,330,875	1,217,737	926,012	1,132,713
905	-	-	6	-	-
909	-	771	156	43	-
910	-	-	6	-	-
912	24,263	27,300	58,176	32,035	25,649
916	-	-	0	-	-
920	1,126,662	592,109	662,744	1,033,267	1,381,574
921	3,396,381	4,950,968	3,025,973	3,982,926	4,775,540
922	(2,631,280)	14	(7)	(840,360)	(4,983,192)
923	489,389	218,011	376,055	318,014	274,290
925	-	93	-	-	-
931	5,117,428	146,603	(75,081)	3,178,232	7,712,413
930.2	64	6	385	276	462
930.1	12	19,769	-	-	-
935	658	26	3	-	-
Total	**10,394,204**	**10,158,530**	**10,421,231**	**10,854,646**	**10,960,871**