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May 2, 2022

-- VIA ELECTRONIC AND U.S. MAIL

Steven M. Kahl, Executive Director
North Dakota Public Service Commission
State Capitol Building, Dept. 408
600 East Boulevard
Bismarck, ND 58505-0480

RE: AMI SMART METER-RELATED TARIFF CHANGES AND RULE VARIANCES
CASE NO. PU-22-_____

Dear Mr. Kahl:

Northern States Power Company, doing business as Xcel Energy, submits the enclosed original and seven copies of the Company's application to the North Dakota Public Service Commission for approval of needed AMI (Advanced Metering Infrastructure) "Smart Meter"-related tariff changes and rule variances.

We request these changes in preparation for our deployment of AMI smart meters in North Dakota, planned to begin in the spring of 2023.

An electronic copy of this filing is also being sent to you for your convenience. Please contact me if you have any questions or comments.

Sincerely,

A handwritten signature in blue ink that reads 'David H. Sederquist'.

DAVID H. SEDERQUIST
SR. CONSULTANT, REGULATION/FINANCE

c: Victor Schock

Enclosures

**BEFORE THE NORTH DAKOTA PUBLIC SERVICE COMMISSION
STATE OF NORTH DAKOTA**

Julie Fedorchak	Chair
Randy Christmann	Commissioner
Sheri Haugen-Hoffart	Commissioner

IN THE MATTER OF THE APPLICATION OF
NORTHERN STATES POWER COMPANY
FOR APPROVAL OF SMART METER-
RELATED TARIFF CHANGES AND RULE
VARIANCES

CASE NO. PU-22-____

Application of Northern States Power Company

I. INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits to the North Dakota Public Service Commission this application for approval of two tariff changes related to our forthcoming deployment of smart meters, and related North Dakota Administrative Code variances. Our new smart meters will replace our current meters and are an integral part of the Company's grid modernization plans.

We submit this application pursuant to N.D.C.C. Section 49-02-03, which establishes Commission authority to supervise rates; N.D.C.C. Section 49-05-05, which allows a utility to make changes to its tariffs upon 30 days' notice to the Commission, and North Dakota Administrative Code Section 69-02-01-11, which governs suspension of Commission rules.

We have previously communicated plans for the Company's grid modernization initiative, which has been referred to in previous filings as the Advanced Grid Intelligence and Security initiative, or AGIS. Most recently, our Advanced Metering Infrastructure (AMI), Field Area Network (FAN), and Advanced Distribution

Management System (ADMS) investments were included in the 2021 Test Year of our electric rate case, Case No. PU-20-441.¹

Xcel Energy must replace its existing Automated Meter Reading (AMR) equipment to ensure we can continue to provide our customers with timely and accurate bills. AMI is a foundational element of a modernized grid. AMI technology – specifically, smart meters – will not only replace our existing remote meter reading capabilities but will also provide additional customer and operational value.

We are assessing the timing of our AMI smart meter deployment based on supply chain availability and regulatory approvals in our various jurisdictions, but we plan to begin installing these AMI smart meters in the second quarter of 2023 or earlier, depending on meter availability.

Our implementation of AMI requires ancillary approvals associated with customer metering and billing information, and an option for customers to “opt-out” of receiving an AMI smart meter.

The specific approvals we seek in this Petition are as follows:

- *Variances to parts of North Dakota Administrative Code Chapter 69-09-02.*
With AMI, we will base our monthly customer billing on the sum of electric usage measured during sub-hourly intervals rather than determining the difference between the previous and current monthly meter readings, as has been the traditional practice. Sections 69-09-02-10 and 69-09-02-11 of the North Dakota Administrative Code govern meter reading and billing and require, among other things, that customers be billed based on “any two consecutive regular meter reading dates” recorded at approximately thirty-day intervals. The new AMI smart meters will measure individual usage during short intervals many times each day. As a result, “consecutive” meter readings will be much more frequent than monthly. As such, we seek a permanent variance from the above-referenced sections of the North Dakota Code to read meters more frequently and base the monthly bill on the summation of those readings. Relatedly, Section 69-09-02-11 subpart 2 requires customer bills to show the current meter reading. Because that value will no longer be relevant to the calculation of customers’ bills, we seek an indefinite variance from this Code to no longer include this information on customers’ bills.

¹ These costs were excluded from rates as part of a deferred accounting provision within the Settlement Agreement in Case No. PU-20-441.

- *Customer Opt-Out Option and Manual Meter Reading Rider.*

With AMI, we intend to offer customers the ability to opt-out of receiving an AMI smart meter that will communicate usage and other information over the Field Area Network (FAN). Customers will have the opportunity to opt-out and instead receive a meter that does not have the radio capabilities to communicate over the FAN. These non-communicating meters will need to be manually read for billing purposes. With this Petition, we seek approval to add an optional Manual Meter Reading (MMR) Rider tariff to our Electric Rate Book for customers who opt-out of an AMI smart meter. The tariff outlines the framework, parameters, and associated customer costs, which we have developed based on the principle of cost-causation.

We believe these operational changes and opportunities are in the public interest and respectfully request the Commission's approval.

II. FILING INFORMATION

Pursuant to Section 69-02-02-04 of the North Dakota Administrative Code, the following information is provided:

A. Contact information for utility making the filing

Shubha Harris
Principal Attorney
Xcel Energy Services Inc.
414 Nicollet Mall, 401-8
Minneapolis, MN 55401
(612) 215-4517
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2302 Great Northern Drive
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We request that all communications regarding this proceeding, including data requests, also be directed to:

Mustafa Adam
Regulatory Administrator Xcel Energy
414 Nicollet Mall – 401, 7th Floor
Minneapolis, MN 55401

regulatory.records@xcelenergy.com

B. Date of filing and proposed effective date

The date of this filing is May 2, 2022. The Company proposes the new Manual Meter Reading Rider tariff be included in the Company's Electric Rate Book effective September 1, 2022, or the first of the month following Commission approval if Commission action occurs after August 15, 2022, to maintain the Company's AMI deployment schedule.

C. Statutory Authority and Compliance

N.D.C.C. Section 49-02-03 establishes Commission authority to supervise rates. N.D.C.C. Section 49-05-05 allows a utility to make changes to its tariffs upon 30 days' notice to the Commission. We submit this application pursuant to North Dakota Administrative Code Section 69-02-01-11, which governs suspension of Commission rules.

D. Articles of Incorporation

Pursuant to Section 69-02-02-04 of the North Dakota Administrative Code, a certified copy of Xcel Energy's Articles of Incorporation is on file with the Commission, as is an original Certificate of Good Standing.

III. BACKGROUND

The Company has recently undertaken significant work to modernize its distribution system. This begins with foundational advanced grid projects that will position us to meet future grid and customer needs while maintaining reliability, safety, and security.

As described in the Direct Testimony of Kelly A. Bloch in our most recent electric rate case,² the Company is undertaking a multi-year project to transform our distribution system into an intelligent and highly automated system. With this long-term strategic initiative, we modernize and transform our electrical distribution grid to ensure the safe, secure, and reliable operation of the grid with the bi-directional flow of energy, and to enable and support improved customer products and services into the future.

² See Case No. PU-20-441, Vol 1.

Our current AMR technology is nearing end of life and our meter reading services vendor, Landis+Gyr (Cellnet) has informed the Company that it will no longer manufacture replacement parts for this system after 2022. With the implementation of the foundational, enabling technology, ADMS, complete as of April 2021, we plan to install AMI smart meters for all our North Dakota customers beginning in the second quarter of 2023, but we may begin installation sooner depending on meter availability and regulatory approvals. FAN installation will precede meter deployment.

IV. GRID MODERNIZATION IMPLEMENTATION

A. Background and Customer Experience Enhancements Overview

Xcel Energy has a 100-year track record of delivering safe, reliable, and affordable energy service to our customers and communities. While we remain focused on those fundamentals, we also have a future vision for an advanced grid that will provide both customer and operational benefits for many years to come. A modernized grid will provide the flexibility needed as technology and our customers' expectations continue to evolve.

Today, customers are demanding more options and higher levels of service from their energy service providers – including Xcel Energy. Through our grid modernization efforts, we intend to enhance interfaces with customers, provide them with better information and more choices, and thus improve their overall experience.

Improvements in the digital platforms that we use to interact with our customers, better energy management options, and enhanced energy conservation opportunities are all available with a more advanced and interactive distribution system. An advanced grid also offers our customers opportunities to better control and manage their monthly bills by providing more timely and granular energy usage data and enabling future advanced rate designs.

Our grid modernization initiative consists of multiple programs utilizing software, hardware, and networks. The initial components of a modernized grid are: (1) our Advanced Distribution Management System; (2) our Field Area Network; and (3) our Advanced Metering Infrastructure. These three elements will extend our visibility and control of the distribution system from the substation level all the way to our customers' premises. We discuss the status of each of these elements in this section.

B. Advanced Distribution Management System (ADMS)

ADMS is an enabling technology and provides an integrated software and hardware support system to allow control center operators, field personnel, and engineers to monitor, control, and optimize the electric distribution system. ADMS gives access to real-time or near real-time data to provide all information on operator console(s) at the control center in an integrated manner and will allow different operating systems and technologies to communicate with each other. We completed ADMS deployment at our distribution control center that has responsibility for our North Dakota and South Dakota service territories in April 2021. Control center operators and engineers within the NSP System have been using ADMS to improve our ability to monitor and control the distribution grid, supporting enhanced reliability and, in certain areas, management of distributed energy resources.

C. Field Area Network (FAN)

The FAN is the wireless communications network that will link our systems and ADMS software to the AMI smart meters and new intelligent field devices. FAN deployment will precede the deployment of the AMI smart meters.

D. Advanced Metering Infrastructure (AMI)

AMI is an integrated system of smart meters, communications networks, and data management systems that enables secure two-way communication between customer meters and utilities' business and operation systems. We plan to begin installing AMI smart meters early in the second quarter of 2023, with installation complete by the end of 2024.

V. CUSTOMER BENEFITS

AMI and FAN are critical foundational elements of our grid modernization strategy that will provide benefits to customers through enhanced reliability, improved core operations and capabilities, new ways to access energy use information, and facilitation of future capabilities.

While the reliability of our North Dakota electric service is already in the upper quartile of the industry, our grid modernization efforts will bring further improvements. We will be able to restore power more efficiently when outages do occur, using automation without the need for human intervention. For those outages

that cannot be restored through automation, our systems will be better at identifying where the outage is and what caused it – benefitting customers through less frequent, shorter, and less impactful outages and more effective communication from the Company when they are impacted by an outage.

With AMI smart meters and FAN in place, customers will have access to granular energy usage data through an online customer portal, which we expect to pair with informed insights and helpful tips on ways to adjust their energy use and save money. Customers will be able to access this data after they receive their AMI smart meter.

AMI smart meters will also enable future smart products and services, including more advanced price signals and rates; deeper insights into energy use and bills; new software application options for customer meters (similar to the applications customers use on their mobile devices), and more.

Overall, our grid modernization efforts further our capabilities, technologies, and program management strategies to enable an improved and more personalized, enhanced customer experience.

VI. AMI SMART METER ROLLOUT CUSTOMER COMMUNICATIONS PLAN

Our plan to inform, educate, and engage customers is an integral part of our customer experience strategy. In this section, we outline our planned phased approach to customer communications during AMI smart meter deployment, and additional considerations.

Smart meter deployment and associated capabilities will be phased in for our customers over the next couple of years. Our customer communications will be implemented in three phases: Pre-Deployment, Deployment, and Long-Term Engagement. We discuss each phase and its respective goals and tactics below.

During each phase, we will utilize various communications channels, including social media, our website, news media outreach, email, community outreach, phone calls, and digital advertising to reach customers with relevant messages and information.

A. Pre-Deployment Phase: Advanced Grid Benefits

During this communications phase, we aim to:

- Create awareness about the overall benefits of the advanced grid. We will explain why we are making this investment, focusing on tangible customer benefits.
- Build customer interest in the new technology by explaining the benefits of smart meters and the tools and options they enable.
- Provide information on customers' ability to opt out of receiving a smart meter, and the capabilities and features that non-communicating meters will be unable to provide.
- Proactively address customer concerns and questions.

B. Deployment Phase: Smart Meter Installation

This phase will begin direct-to-customer outreach and notifications to those customers who are slated to receive smart meters. A phased notification schedule, beginning approximately 90 days before the customer receives their smart meter, will include detailed information explaining smart meters and benefits, how meters will be deployed and installed, and what to expect during the installation process. Customers will receive at least four notifications through multiple communications channels prior to the planned smart meter installation date at their premises. These communications will be applicable to small business customers as well as residential customers. Xcel Energy account managers dedicated to large C&I customers will help ensure a smooth experience before, during, and after smart meter installation.

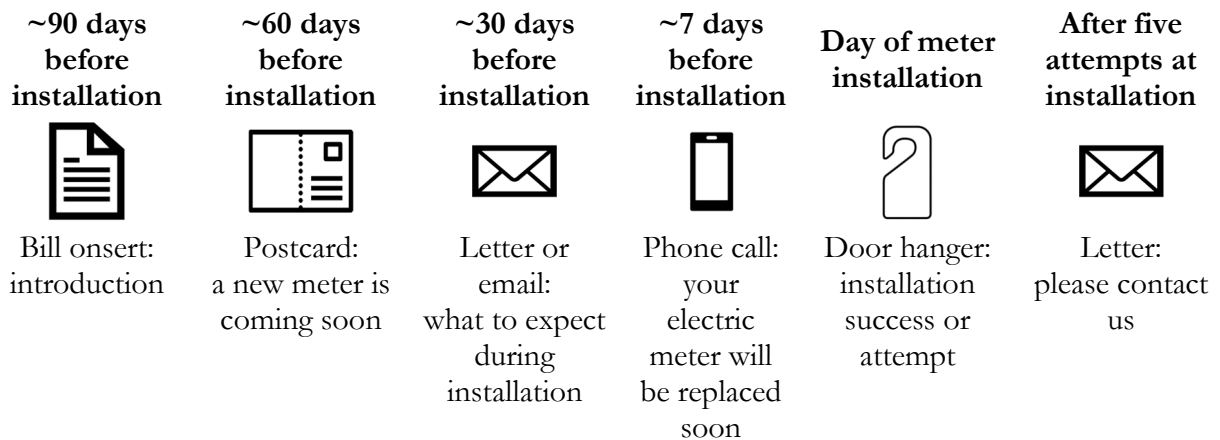
During this communications phase, we aim to:

- Provide practical and timely information and notifications about the deployment and installation processes.
- Build customer interest in the change by explaining the benefits of smart meters and the tools and options they enable.
- Ensure customers are aware of their option to opt out of receiving a smart meter, as detailed in Section VIII.

- Work with communities and equip them with our meter installation schedule and informational content about the new meters, should they receive questions from residents.

Figure 1 shows the notifications that will occur prior to meter installation, and the materials customers will receive during and after meter installation or attempt.

Figure 1: Meter Installation Communications Schedule



C. Long-Term Engagement Phase: Tools and Resources

This phase will begin as customers receive their smart meters and will promote and encourage the use of new smart meter capabilities, highlight the features of new tools, and inform of resources as they become available.

During this communications phase, we aim to:

- Inform customers of new capabilities, tools, and resources as they become available.
- Develop and implement a process for providing ongoing customer support and encourage their adoption of new capabilities to help customers save energy and money.
- Evaluate and refine messages and tactics to continuously improve and ensure the best possible customer experience with their new smart meters.

D. Customer Messages: Addressing Concerns

Our experience with AMI smart meter deployment in other states shows that customers are interested in this technology, and broad deployment will require the Company to manage expectations and address customer concerns. The Company understands that we need to anticipate and respond to situations that could affect customers, stakeholders, or the community during smart meter deployment. Our communication materials will attempt to address key issues and possible smart meter concerns, including:

- **Billing changes.** Messages will address the ways customers' bills will look different once they have a smart meter. This includes the change to interval billing as outlined in Section VII below, as well as other differences in how usage information is displayed on their bills. Information on the changes to bills will be available on the website and call center agents will be trained to answer questions and assist customers.
- **Opt-out policies.** The Company will address opt-out policies for AMI smart meters in Deployment Phase communications materials and on our website to let customers know the proper channels for opting out of a smart meter should they prefer to receive a non-communicating meter, as detailed in Section VIII. This will include details on fees related to opting out, as well as explaining which capabilities and features they will and will not be able to take advantage of if they choose to opt out of a smart meter.
- **Radio frequency (RF) emissions.** Smart meters emit low levels of electromagnetic radiation through their RF communications. The Company will provide information to customers to alleviate unfounded concerns around health impacts and interference with other wireless devices.
- **Privacy and security.** The Company will assure customers that we take their data privacy seriously by providing information about our data privacy policies, as well as usage data access policies.
- **Deployment expectations.** Communications will help make it easy for customers to properly identify our Company and contract installer employees and know what to expect when meter installers are working at their home or business.

VII. NORTH DAKOTA ADMINISTRATIVE CODE VARIANCES

A. Background and Change to Interval Billing

Today, monthly customer bills are calculated using an “incremental” approach – calculating usage for each billing period by subtracting the previous meter reading from the current meter reading. This is a common legacy energy billing practice for customers on kilowatt-hour (kWh) consumption only (i.e., non-demand) rates, and relies on very basic meter functionality that registers usage in “increments” through use of analog dials or digital measurement of each kWh used. These readings occur approximately once each month and result in customers being billed for the kWh used over the course of the billing period. Consistent with this technology, Sections 69-09-02-10, and 69-09-02-11 of the North Dakota Administrative Code require, among other things, customers to be billed based on two consecutive meter readings at approximately thirty-day intervals. In addition, Section 69-09-02-11 subpart 2 requires customer bills to show the present meter reading and date of the present meter reading.

As we transition our customers to smart meters, and ultimately implementation of time-of-use and other advanced rates for customers enabled by AMI, we are programming our systems to base customer bills on usage during multiple “intervals” – generally 15 minutes – recorded by the smart meter during the month.

Meter register reads go back to the invention of the electricity meter in the late 1800s. The first meters accumulated consumption (kWh) in the same way a car odometer accumulates miles. The meter’s register is its memory and mechanically displays one value: cumulative consumption from the installation date of the meter. A register read is the number recorded at the date and time the value is gathered, and subtracting the prior read from the current read has been the basis for how most customers have been billed until the advent of specialized meters to support advanced rates for certain customers – or on a large scale, utility implementation of AMI.³ This measurement of consumption is then multiplied by the rate to determine the bill.

More advanced meters and/or load profile recorders typically used with large industrial and commercial customers were introduced mid-century and could record

³ Shortly after the initial meters were invented, electricity meters that could measure and record maximum demand were invented. For these meters, there is a second register to measure demand. The demand register begins at zero, then increases each time the electricity demand (kW) reaches a new peak. The register remains at the peak value until it is cleared and reset to zero upon being read, which signals the beginning of a new billing period.

electricity consumption continuously for consecutive time periods commonly known as intervals – typically 5, 15, 30 or 60-minute intervals. These load profile capabilities allow utilities to offer time-of-use rates and facilitate participation in demand response programs and interruptible rates. They also facilitate demand billing, whereby peak demand over a given interval is determined and multiplied by the demand rate per kW to determine the demand charge for the period.

Today's smart meters measure and store the consecutive interval information – and with communication capabilities afforded by systems such as the Company's FAN, transmit the information to the utilities' systems to calculate bills using the interval data. This means that our bills to customers will rely on the sum of the usage intervals over the billing period and will no longer be based on comparing consecutive meter readings at the end and beginning of a billing period (approximately 30 days).⁴ While our billing cycles will not change with deployment of smart meters, we seek approval of an indefinite variance from the above-mentioned Administrative Code sections. The variance is necessary to allow us to read meters more often than approximately every 30 days, and bill customers based on the sum of usage intervals over a billing period of approximately 30 days. Similarly, because the meter reads at the beginning and end of an approximately 30-day period will no longer be the basis for or relevant to the bill calculation, we seek approval of an indefinite variance to no longer display the Present Meter Reading value or date on customers' bills once we install a smart meter or non-communicating meter.

We propose to modify the current Meter Reading Information box on customer bills to look as follows:

⁴ We will continue to use register reads in our internal systems as part of our billing validation process.

Figure 2: Current Meter Reading Information Section

METER READING INFORMATION			
METER 1234567		Read Dates: 04/05/20 – 05/04/20 (29 Days)	
DESCRIPTION	CURRENT READING	PREVIOUS READING	USAGE
Total Energy	00000 Actual	00000 Actual	000 kWh

**Figure 3: Proposed Meter Reading Information Section –
Post-AMI/MMR Meter Installation**

METER READING INFORMATION		
METER 1234567		Read Dates: 04/05/20 – 05/04/20 (29 Days)
DESCRIPTION	USAGE TYPE	USAGE
Total Energy	Actual	267 kWh

**Figure 4: Illustrative Meter Reading Information Bill Section –
Time of Use Rate**

METER READING INFORMATION		
METER 1234567		Read Dates: 10/02/18 – 10/31/18 (29 Days)
DESCRIPTION	USAGE TYPE	USAGE
Total Energy	Actual	989 kWh
On Pk Energy	Actual	198 kWh
Off Pk Energy	Actual	193 kWh
Mid Pk Energy	Actual	598 kWh

B. Implementation

In general, the change to interval billing and bill presentment will occur on a phased basis, as each customer receives a new meter. We intend to communicate this change as part of our overall customer education and communications plan, outlined in Section VI. For this change specifically, customers will have access to information explaining the change and an illustrative example of how their bill will look. After receiving a new meter, we will also provide information about where to access an explanation of the change to interval billing and the Meter Reading Information section of their bill, and how to get even greater information about their usage through the customer energy portal that will be available for customers upon receiving a smart meter.

C. Variance Request

Through this Petition, we seek an indefinite variance to North Dakota Administrative Code as follows (*emphases added*):

69-09-02-10. Meter readings.

1. *Readings of all meters used for determining charges to customers shall be made each month. The term "month" means the period between any two consecutive regular meter reading dates, which shall be as nearly as practicable at thirty-day intervals. The meter reading date may be advanced or postponed not more than five days without adjustment of the billing for the period.*

69-09-02-11. Billing.

1. Bills for electric service shall be rendered monthly, unless otherwise authorized by the commission, or unless service is rendered for a period of less than a month. *The term "month" as used for billing purposes means the period between any two consecutive regular meter reading dates, which shall be as nearly as practicable at thirty-day intervals. [...]*
2. *Each bill shall show the present meter reading; the date of the present meter reading;* the number of kilowatt hours consumed; the demand, if used for billing purposes; the date or time when the bill is due; the gross and net amounts of the bill and the date or time after which the gross amount must be paid, or the net amount of the bill and the date or time after which the penalty applies and the amount thereof; and identity of the class of service or rate schedule under which the bill is computed. Estimated bills and prorated bills shall be distinctly marked as such.
5. Bills for service shall be rendered *within thirty days from the present meter reading date.*

As we have outlined, the present and last preceding meter readings will no longer be relevant to the calculation of customer bills after they receive a new meter. As such, we seek a variance from the noted portions of these Codes to allow the Company to read meters more frequently than monthly, while still billing customers monthly; i.e., as nearly as practicable to thirty-day intervals. We also seek a variance to allow the Company to no longer include the meters' present meter reading value or date on customer bills once a customer has a new meter.

VIII. CUSTOMER OPT-OUT OPTION

The second change we propose is to provide customers the option to opt out of having an AMI smart meter installed.

A. Optional Manual Meter Reading Rider

Typically, the reason some customers have chosen not to receive a smart meter is because they distrust how its communication capabilities will be used, despite the benefits these capabilities offer to the customer and overall distribution system. Based on our experience in Colorado and the experience of other utilities that have deployed smart meters, we expect the percentage of customers opting out to be very small, perhaps less than one percent.

Therefore, we propose to provide these customers with a “non-communicating” meter that must be read manually. This type of meter will have the same capability to measure energy use in sub-hourly intervals, but it will not contain a communications module to transmit usage and other information through the FAN to the Company’s systems. Rather, a Company representative will have to manually read the meter on a monthly cycle. In this section, we discuss our proposed set of cost-causation based charges for this optional service for customers that opt out of an AMI smart meter. Because existing AMR meters are reaching end-of-life, customers will not have the option to keep their existing meter.

1. *Manual Meter Reading (MMR) Rider*

The option to opt out of an AMI smart meter installation and have a non-communicating, manual-read meter instead will be available to customers taking service under the Company’s Residential Service, Residential Time of Day, Small General Service rates, and Small General Time of Day Service.⁵ Customers can opt out before the start of the AMI deployment; customers who wish to opt out after the smart meter is already installed can do so by paying an additional fee (*Non-Standard Meter Installation Charge*) to cover the costs associated with a technician replacing the AMI smart meter with a non-communicating meter.

⁵ Larger commercial customers will not be eligible to opt out. We have learned that, for the most part, such customers want and benefit from the timely interval data provided by AMI and do not request to opt out. Additionally, the cost to maintain an inventory of non-communicating meters suitable for the small customer base of larger commercial customers would be cost-prohibitive.

All customers with a non-communicating meter will incur a monthly meter reading charge (*Fixed Charge*) through the proposed MMR Rider, to cover costs associated with the Company dispatching a meter reader to manually gather the customer's usage information for billing purposes. Finally, customers who initially opt out of an AMI smart meter but later choose to have an AMI smart meter installed will incur a *Non-Standard Meter Removal Charge* for the costs of having a Company technician replace the non-communicating, manually read meter with an AMI smart meter.

In addition to taking service under the Company's Residential Service, Residential Time of Day, Small General Service rates, and Small General Time of Day Service rates, the following terms and conditions will apply to MMR customers:

1. Customers who elect to receive this service will be subject to the Non-Standard Meter Installation Charge upon request for this service. However, a one-time waiver of the Non-Standard Meter Installation Charge will apply to customers who elect this service prior to the installation of a standard AMI smart meter at their premise(s).
2. Customers who cancel this service or vacate the premise where the service was requested will be subject to the Non-Standard Meter Removal Charge.
3. This rider will separately apply to each individual non-standard meter.
4. The Company reserves the right to refuse availability of this rider if the:
 - a. Manual meter reading service would create a safety hazard for the customer, the public, or the Company's personnel or facilities,
 - b. Customer does not allow the Company's employees or agents access to the non-standard meter(s) at the customer's premise(s), or
 - c. Customer has a history of meter tampering.
5. Entities such as multi-unit dwelling associations are not authorized to elect this rider on behalf of individually metered customers.
6. Customers electing manual meter reading service may receive bills based on estimated meter readings in any month where circumstances prevent a meter reading.

2. *MMR Cost Components*

This section sets forth the basis for the monthly manual meter reading *Fixed Charge* and the one-time *Non-Standard Meter Installation Charge* and *Non-Standard Meter Removal Charge* and how they would apply in various customer circumstances. In general, our structure for the proposed charges associated with this optional service are cost-causation based and allow for the potential difference in cost between an AMI smart meter and a non-communicating meter.

a. *MMR Rider Fixed Charge*

We consider four components for the development of the MMR Rider Fixed Charge: (1) labor expense associated with manual meter reading personnel, (2) non-labor expense including fleet vehicle expense, personal mileage reimbursement, safety equipment, and other materials required, (3) a credit for the incremental meter cost savings of a non-communicating meter, and (4) a credit for meter reading costs already included in base rates, which we note will expire when the underlying cost is no longer included in base rates.

Based on these components, our calculation of the Fixed Charge is \$17.32. However, this cost is an estimate based on the current cost to manually read meters and an assumed volume of manual readings. Since the actual cost will be in part dependent on the number of customers that choose to opt of the standard smart meter, our proposed Fixed Charge is rounded down to \$15.00 per month.

The labor and non-labor components of this Fixed Charge are based on an average of our historical manual meter reading costs and the assumption that 0.5 percent of customers will choose this service. Basing this charge on our historical manual meter reading costs is an appropriate and reasonable point of reference because the manual meter readings we will perform for this optional service will use the same Company personnel and equipment as are required today when we collect manual meter readings from North Dakota customer premises. We provide a schedule outlining our methodology and proposed charge amount as Attachment B.

b. *Non-Standard Meter Installation and Removal Charges*

The *Non-Standard Meter Installation* and *Non-Standard Meter Removal* charges in the MMR Rider consist primarily of direct metering technician personnel labor cost and are consistent with the accounting method we use to assign meter costs as meters are installed. We refer to this methodology as “first set credits.” In summary, when we receive meters, we capitalize the cost of the equipment and the estimated labor to install it at the time of receipt (instead of when they are assigned to a specific job). As the meters are later installed, the cost of an individual meter and its installation labor and associated ancillary costs⁶ are credited (called “first set credits”) against the initial purchase/receipt. The cost resulting from this methodology is \$42.16. Again, because

⁶ Other ancillary costs include labor loads, truck expense, mobile data expense, warehouse expense, and supervisor labor costs.

this cost is an estimate, we propose to round this charge down to \$40.00 per instance. We provide a schedule outlining this charge component as Attachment C.

We discuss below how these charges will apply in various customer circumstances.

c. Summary

Through the MMR Rider, customers electing MMR service will incur the *Fixed Charge* every month and a *Non-Standard Meter Removal Charge* should they terminate the optional MMR service and/or move from the premises where they enrolled. This charge represents the cost the Company will incur to remove the non-communicating, manually read meter and replace it with a standard AMI smart meter.

Customers that elect this optional service *prior to* installation of a smart meter as part of the Company's initial broad AMI deployment will not be charged for installation of the non-communicating meter, as it will be done as part of the AMI implementation – avoiding a special trip by a meter technician. Customers electing this service *after* a smart meter is already installed will incur a *Non-Standard Meter Installation Charge* for the replacement of the AMI smart meter with a non-communicating, manual-read meter.

We summarize in Table 1 below the inputs and assumptions used in establishing these charges, along with the proposed charges.

Table 1: Summary of Charge Component Basis and Proposed Charges

Circumstance	Cost Study	Proposed Charges
Customer opts out of AMI smart meter <u>prior to</u> installation of AMI smart meter	<p><i>Fixed Charge (Manual Meter Read Charge)</i> – Based on average of actual historical manual meter reading costs, +/- meter cost differential, less meter reading costs already reflected in base rates. Assumes 0.5 percent participation. Calculation methodology derives a cost estimate for manual meter reading of \$17.32 per month, which we propose to round down to \$15.00 per month.</p> <p align="right">– plus –</p> <p><i>Non-Standard Meter Removal Charge</i> – Based on “first set credit,” which includes labor and associated ancillary costs. Proposed calculation methodology currently derives a cost estimate of \$42.16, which we propose to round down to \$40.00 per month.</p>	<p>\$15.00 per month</p> <p align="center">+</p> <p>\$40.00 one-time charge on final bill reliant on manual meter reading (if customer vacates premise or selects AMI smart meter)</p>
Customer opts out of AMI smart meter <u>after</u> an AMI smart meter has been installed	<p><i>Fixed Charge (Manual Meter Read Charge)</i></p> <p align="right">– plus –</p> <p><i>Non-Standard Meter Installation Charge</i> – Based on “first set credit,” which includes labor and associated ancillary costs. Calculation methodology derives a cost estimate of \$42.16, which we propose to round down to \$40.00 per month.</p> <p align="right">– plus –</p> <p><i>Non-Standard Meter Removal Charge</i></p>	<p>\$15.00 per month</p> <p align="center">+</p> <p>\$40.00 one-time charge on first bill reliant on manual meter reading</p> <p align="center">+</p> <p>\$40.00 one-time charge on final bill reliant on manual meter reading (if customer vacates premise or selects AMI smart meter)</p>
Customer selects AMI smart meter service <u>after</u> a manual read meter has been installed	<p><i>Fixed Charge (Manual Meter Read Charge)</i></p> <p align="right">– plus –</p> <p><i>Non-Standard Meter Removal Charge</i></p>	<p>\$15.00 per month until AMI smart meter is installed</p> <p align="center">+</p> <p>\$40.00 one-time charge on final bill reliant on manual meter reading</p>

B. Implementation

Our implementation of this optional MMR service will begin with a multi-faceted customer communication plan as part of our broad AMI implementation, detailed previously in Section VI of this Petition. Generally, AMI smart meter deployment will be done based on geography, focusing on customer locations rather than customer classes. When deploying meters, we will provide customers with increasingly detailed communications at various points prior to smart meter installation. Among other things, these pre-installation communications will contain instructions for customers about where to find more information about the installation schedule and process, as well as how to opt-out of receiving a smart meter.

Once the smart meters are broadly installed, customers will still have the option to opt out of having a smart meter and choose the proposed manual meter reading service. On an ongoing basis, customers will be able to access information about AMI smart meters on our website, or from one of our customer service representatives. Customers electing MMR service will complete a service order request.

C. Industry Information

We reviewed opt-out costs across the country and determined that manual meter reading costs average \$30.61 per month per premise, and meter exchange (installation/removal) costs average \$131.00 per customer. The amounts we propose for our North Dakota customers are representative of the incremental costs we expect to incur and are significantly lower than these national averages, demonstrating that the Company's proposed costs for manual meter reading and exchange costs are reasonable.

IX. TARIFF MODIFICATIONS

Attachment A shows the proposed changes in both redline and clean versions. The tariff provides that the optional rider will be applied to customer bills subsequent to Commission approval. The tariff sheets modifications and optional MMR tariff will be made effective after the Commission acts on this application. The final tariff sheets will be revised as necessary to comply with the Commission's final order in this proceeding. The tariff sheets are:

North Dakota Electric Rate Book – NDPSC No. 2

Section No. 1, Sheet No. 2, Revision 9

Section No. 5, Sheet No. TOC-2, Revision 11

Section No. 5, Original Sheet No. 92

X. CUSTOMER NOTICES

To ensure compliance with the customer information provisions of Section 69-09-02-02.1 of the North Dakota Administrative Code, the Company's North Dakota customers electing the MMR Rider will see a bill message on the first bill they receive after electing the MMR Rider:

You have elected on-site manual meter reading service and a non-standard, non-communicating meter. Your bill now includes the monthly Manual Meter Reading Rider charge.

XI. CONCLUSION

We believe these operational changes and opportunities are in the public interest and respectfully request the Commission's approval of:

- An indefinite variance to Sections 69-09-02-10 and 69-09-02-11 to allow the Company to read meters more often than every 30 days and bill customers based on the sum of usage intervals over a billing period of approximately 30 days; and an indefinite variance to North Dakota Administrative Code Section 69-09-02-11 Subpart 2 to allow the Company to no longer include the present meter reading value or date on bills provided to customers with AMI smart meters and non-communicating, manual read meters, and
- The proposed MMR Rider for residential and small business customers who prefer to have a non-communicating, manual read meter installed at their homes or businesses.

Dated: May 2, 2022

Northern States Power Company

Legislative

NORTH DAKOTA ELECTRIC RATE BOOK - NDPSO NO. 2

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NORTH DAKOTA ELECTRIC RATE BOOK – NDPSO NO. 2

RATE SCHEDULES

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MANUAL METER READING RIDER

Section No. 5
Original Sheet No. 92

AVAILABILITY

Available as an option to Residential Service, Residential Time of Day, Small General Service, and Small General Time of Day Service customers who elect on-site manual meter reading service and a non-standard, non-communicating meter instead of having their energy usage measured with standard Advanced Metering Infrastructure (AMI) with two-way communication capabilities (smart meter).

RATE

<u>Fixed Charge per Month</u>	<u>\$15.00</u>
<u>Non-Standard Meter Installation Charge</u>	<u>\$40.00</u>
<u>Non-Standard Meter Removal Charge</u>	<u>\$40.00</u>

TERMS AND CONDITIONS OF SERVICE

1. Customers who elect to receive this service will be subject to the Non-Standard Meter Installation Charge upon request for this service. However, a one-time waiver of the Non-Standard Meter Installation Charge will apply to customers who elect this service prior to the installation of a standard AMI smart meter at their premise(s).
2. Customers who cancel this service or vacate the premise where the service was requested will be subject to the Non-Standard Meter Removal Charge.
3. This rider will separately apply to each individual non-standard meter.
4. The Company reserves the right to refuse availability of this rider if the:
 - a. Manual meter reading service would create a safety hazard for the customer, the public, or the Company's personnel or facilities,
 - b. Customer does not allow the Company's employees or agents access to the non-standard meter(s) at the customer's premise(s), or
 - c. Customer has a history of meter tampering.
5. Entities such as multi-unit dwelling associations are not authorized to elect this rider on behalf of individually metered customers.
6. Customers electing manual meter reading service may receive bills based on estimated meter readings in any month where circumstances prevent a meter reading.

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(Continued on Sheet No. 1-3)

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NORTH DAKOTA ELECTRIC RATE BOOK – NDPSO NO. 2

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MANUAL METER READING RIDER

Section No. 5
Original Sheet No. 92

AVAILABILITY

Available as an option to Residential Service, Residential Time of Day, Small General Service, and Small General Time of Day Service customers who elect on-site manual meter reading service and a non-standard, non-communicating meter instead of having their energy usage measured with standard Advanced Metering Infrastructure (AMI) with two-way communication capabilities (smart meter).

RATE

Fixed Charge per Month	\$15.00
Non-Standard Meter Installation Charge	\$40.00
Non-Standard Meter Removal Charge	\$40.00

TERMS AND CONDITIONS OF SERVICE

1. Customers who elect to receive this service will be subject to the Non-Standard Meter Installation Charge upon request for this service. However, a one-time waiver of the Non-Standard Meter Installation Charge will apply to customers who elect this service prior to the installation of a standard AMI smart meter at their premise(s).
2. Customers who cancel this service or vacate the premise where the service was requested will be subject to the Non-Standard Meter Removal Charge.
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 - a. Manual meter reading service would create a safety hazard for the customer, the public, or the Company's personnel or facilities,
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N

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Monthly Manual Meter Reading Service Rider Fixed Charge

Cost in dollars per meter

Labor expense (including benefits)	\$17.12
Transportation and other non-labor expense	\$1.69
Incremental cost(savings) of the interval data meter	(\$0.33)
Meter reading costs included in base rates	<u>(\$1.16)</u>
Monthly Interval Data Metering Fixed Charge	\$17.32

