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Fargo, ND 54802

June 28, 2023

VIA ELECTRONIC MAIL AND U.S. MAIL –

Steven M. Kahl, Executive Director
North Dakota Public Service Commission, Dept. 408
State Capitol, 600 East Boulevard
Bismarck, ND 58504-0480

RE: 2022 GAS RATE CASE COMPLIANCE FILING
CASE NO. PU-21-381

Dear Mr. Kahl:

Northern States Power Company, doing business as Xcel Energy, submits the enclosed original and seven copies of this filing to the North Dakota Public Service Commission, in compliance with Order Point 5 of the Commission's October 27th, 2022 Order in the above-mentioned docket.

Order Point 5 of the Order states:

NSP shall provide a filing detailing the existing energy conservation methods employed by the company. To the extent possible, the filing must demonstrate the impact that revenue decoupling has had on encouraging energy efficiency.

Xcel Energy offers four natural gas energy efficiency programs to residential customers in North Dakota. We describe these below:

Home Energy Audits

The Home Energy Audit program offers home energy audits to residential customers with Xcel Energy natural gas service. Xcel Energy pays the bulk of the cost, but there is some cost to the customer (\$30 for a "walkthrough" audit and \$60 for a standard audit, which includes a blower door test and potentially an infrared scan). Home energy audits do not, in themselves, save energy, but identify recommendations for customers to pursue for energy efficiency savings. The Company hires a third-party to conduct these audits.

Residential Heating

This Residential Heating program offers rebates to residential customers with Xcel Energy natural gas service who purchase and install energy efficient natural gas furnaces or boilers. Rebates range from \$75 - \$120 depending on the furnace or boiler efficiency. The Company will likely update the program in 2024 to adjust minimum qualifying efficiency for a boiler rebate due to recent changes in federal standards and market practices. Customers can work with a contractor of their choice to install the equipment.

Water Heating

The Water Heating program offers rebates to residential customers with Xcel Energy natural gas service who purchase and install energy efficient natural gas water heaters. This includes both storage tank and tankless water heaters. Rebates for standard tank water heaters are \$75 while tankless water heater rebates are \$250, depending on efficiency levels. Customers can work with a contractor of their choice to install the equipment. The Company provides a list of contractors on our website, but this is for information only and customers are not limited to selecting from the list.

Energy Efficient Showerheads

The Energy Efficient Showerhead program offers low-flow showerheads and aerators to residential customers with Xcel Energy natural gas service for purchase through the Xcel Energy Store and in response to email and postcard campaigns. The Company offers at least one model of showerhead, bathroom aerator, and kitchen aerator that is free after rebate. Other models are available at discounted rates for customers who want something different, such as additional features or different finishes. By saving water (including hot water), these showerheads and aerators reduce natural gas usage by reducing the usage of the water heater.

The Company's natural gas conservation programs are funded through operations and maintenance (O&M) budgets and recovered from all customers via the monthly customer charge. Unlike electric programs, natural gas conservation typically results in only a modest benefit in terms of avoided capital investment; the majority of benefits are in the form of avoided gas commodity cost.¹ This means that, in order to ensure cost-effectiveness and minimize the risk of intra-class subsidy, the incentives the Company offers natural gas customers in North Dakota are somewhat more modest than in other states.

Conservation achievements are a function of two primary (and related) factors: the availability of cost-effective conservation technologies, and the commodity cost of natural gas. Higher gas costs tend to increase the adoption of conservation technologies

¹ Because the gas system must be sized to serve peak gas demand, a reduction in annual consumption has much less impact on the cost of providing service – two customers may represent the same contribution to peak capacity needs even with considerably different annual gas usage.

by customers because they increase the technologies' cost-effectiveness by reducing payback periods. From 2009 until relatively recently, natural gas commodity costs have been stable at a historically low gas price, and no new major natural gas conservation technologies have been developed. This has changed recently with increased gas costs over the past couple of years and the emergence of natural gas conservation technologies, such as electric heat pump equipment for residential space- and water-heating.² These developments suggest an increase in the potential to deliver gas bill savings to Residential customers through natural gas conservation in the future. The Company has begun to launch programs to capitalize on this potential in other states and sees potential for these programs in North Dakota.

The current rate design for residential customers with Xcel Energy natural gas service recovers all non-gas, local distribution revenue requirements attributable to the Residential class of customers through a monthly "Delivery Services" charge. This effectively removes the impact on Company revenues from reduced consumption that is present in volumetric rate designs. The combination of non-volumetric rate design and careful attention to ensure that programming is cost-effective results in an effective alignment of interests: Participating customers benefit from rebates and education to help manage their gas use; the Company is held whole with respect to changes in consumption and its ability to earn authorized revenue; and non-participating customers do not pay for rebates that exceed the benefit that energy efficiency provides to the overall system. Over time, this alignment of interests has allowed the Company to maintain its on-going commitment to natural gas conservation for our Residential customers. The current rate design, by removing the disincentive to the Company to pursue conservation, will support these efforts.

In theory, a volumetric billing component would increase the cost per therm for a customer, increasing their interest in conservation and reducing the payback period for an efficient technology. In practice, however, this effect is modest. As an example, consider a residential customer with annual usage of 780 therms considering a high-efficiency heating system that would save twenty percent of their heating energy use, or about 109 therms per year, with an incremental cost of \$1,000.³ In the twelve month period from July 2022 to June 2023, the simple average cost of gas for residential customers was \$0.781853 per therm. This yields annual gas commodity savings of \$85.22, resulting in a simple payback of about 11.7 years.⁴ With a rebate from the Company of \$100, this is reduced to about 10.5 years.⁵

² While heat pump technology itself is not new, in recent years significant strides have been made in both improving performance and reducing costs.

³ These figures are estimates for purposes of the example, but are generally accurate; space heating typically represents roughly 70 percent of most residential customers' annual consumption.

⁴ 109 therms saved per year * \$0.781853 per therm = \$85.22 saved per year; \$1,000 / \$85.22 = 11.73 years simple payback.

⁵ \$900 / \$85.22 = 10.56 years simple payback.

If the Company's monthly Delivery Service charge were reduced to \$18.48 from the current \$22.25, the volumetric cost of gas to customers would need to increase in order to ensure revenue recovery at the authorized level. The amount of the increase would be roughly \$0.058 per therm, resulting in a total cost of \$0.839853 per therm.⁶ This would increase the customer's annual savings by about \$6.32 per year, resulting in a modest improvement in the payback period of the investment (from 11.7 years to 10.9 years).⁷

Using rate design to create "price signals" for energy efficiency is thus less effective than providing up-front incentives in terms of increasing the value proposition for energy efficiency investments.⁸ Moreover, such a rate design results in re-introducing a throughput incentive for the Company, since recovery of fixed costs becomes dependent on customer consumption. To the extent customers respond to the "price signal," their reduced usage would lead to a revenue shortfall that drives further rate increases – increases which would affect non-participating customers. Further, the volumetric charge would make Company revenue more dependent on weather, effectively penalizing and rewarding both the Company and customers for a factor outside of their control.

Through the current rate design, the Company's interests in cost recovery are not placed at risk when customer usage changes, and the Company is thus able to provide a stronger incentive to conservation (through its rebates) than can be achieved easily through rate design, without creating the subsidization and revenue shortfall risks attendant with a rate-focused approach.

An electronic copy of this filing is also being sent to you for your convenience.

Please contact me at alex.j.nisbet@xcelenergy.com if you have any questions regarding this filing.

Sincerely,

ALEX NISBET
REGULATORY POLICY SPECIALIST

c: Victor Schock

⁶ $\$22.25 - \$18.48 = \$3.77$ per month = \$45.24 per year, divided by expected annual consumption of 780 therms = \$0.058 per therm, plus commodity cost of \$0.781853 = \$0.839853 per therm.

⁷ $109 \text{ therms saved} * \$0.058 \text{ per therm delivery charge} = \6.32 , plus commodity savings of \$85.22 = \$91.54 per year total savings. $\$1,000 / \$91.54 = 10.92$ years simple payback.

⁸ Note that the example above considered only simple payback with no consideration of the time value of money.