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**STATE OF SOUTH DAKOTA
BEFORE THE
SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**

IN THE MATTER OF THE PETITION OF
NORTHERN STATES POWER COMPANY
FOR APPROVAL OF THE 2017 ANNUAL
DSM STATUS REPORT, INCLUDING 2017
COST RECOVERY AND INCENTIVE AND
APPROVAL OF THE PROPOSED 2019 DSM
COST ADJUSTMENT FACTOR AND
PROGRAM PLAN

**PETITION FOR 2017 DSM
PROGRAM APPROVAL AND
PROPOSED 2019 DSM COST
ADJUSTMENT FACTOR**

DOCKET NO. EL18- ____

Northern States Power Company, doing business as Xcel Energy, submits to the South Dakota Public Utilities Commission, this Petition seeking approval of our 2017 Annual Demand Side Management (DSM) Report and Proposed 2019 DSM Plan (Plan).

We respectfully request that the Commission approve the following:

- The Company's 2017 DSM Tracker account;
- Approve the incentive of \$225,188 earned for 2017 program performance;
- Approve the proposed 2019 electric DSM Adjustment Factor of \$0.000486 per kWh; and
- Approve the proposed 2019 DSM Plan.

The remainder of our filing will include the following sections:

I. 2017 DSM Status Report

This section presents 2017 program performance including budgets, goals, expenditures, actual energy savings and participation. This section also specifies any programmatic changes for our 2019 Plan.

II. DSM Cost Recovery Report

This section provides the final 2017 DSM Tracker seeking approval to record \$809,595 in DSM spending in its DSM Tracker account.

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III. DSM Incentive Report

Calculations of the Company's DSM Financial Incentive can be found in this section. We request approval to record and recover \$225,188 in incentive from customers in the DSM Tracker for calendar year 2017.

IV. DSM Cost Adjustment Factor Report

The section presents the calculation of the 2017 DSM Cost Adjustment Factor to be applied to customer electric usage for recovery of 2017 DSM expenditures, effective January 1, 2019. We are proposing a new electric DSM Cost Adjustment Factor of \$0.000486 per customer kWh; which is a reduction in the current rate.

V. Summary of Proposed 2019 DSM Plan

We provide the portfolio level executive summary along with updated cost-effectiveness results for our 2019 Plan.

REPORT

I. 2017 DSM STATUS REPORT

A. Executive Summary

Demand Side Management resources are part of a wide variety of offerings by the Company to empower our customers to control their energy usage and their monthly electric bills. Our DSM portfolio offers a mix of solutions designed to meet individual needs and preferences –from lighting to load management. We provide programs designed to meet individual interests of all types of customers, offering everyone the opportunity to participate.

In 2017, we successfully helped customers manage their energy bills by achieving more than 6 GWh of energy savings. The Company surpassed their goals for 2017 as a result of an exceedingly successful year for Home Lighting and Saver's Switch. In addition, our Lighting Efficiency program began to grow as the market leaned towards LED lighting. Our 2019 Plan aims to continue these successes.

The purpose of our energy efficiency portfolio is to encourage customers to adopt high efficiency equipment. As such, we identified opportunities in 2017 to increase residential

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participation resulting in increased spending above our anticipated budget. The total actual expenditures of \$809,595 falls above the filed budget, however, within the Commission approved budget flexibility.¹ We note that no programs were suspended and all rebates were paid within the calendar year.

There are often times in which rebate spend in Residential Lighting (which also covers small businesses) exceeds rebate spend in the commercial programs. The Company offers Table 1 as verification that these programs do not cross subsidize each other or rather neither segment is receiving more benefit than another. Although there have been changes in the percent of spend as well as percent of kWh over time, the percent of recovery between classes has been consistent.

Table 1 – Cross Subsidization Review

Year	Percent of Spend (excl. Planning)		Percent of kWh		Percent of Recovery	
	Residential	Business	Residential	Business	Residential	Business
2012	28%	72%	23%	77%	35%	65%
2013	29%	71%	17%	83%	36%	64%
2014	35%	65%	22%	78%	35%	65%
2015	67%	33%	62%	38%	35%	66%
2016	34%	66%	26%	74%	35%	65%
2017	44%	56%	45%	55%	35%	65%

To evaluate the cost-effectiveness of our portfolio for 2017, we looked at the Total Resource Cost (TRC) ratio, which compares total benefits to total costs of the portfolio.² If a program or portfolio has a TRC ratio above one, it is considered cost-effective. As shown in the table below, the 2017 portfolio demonstrated a TRC Ratio value of 1.71.

The 2017 DSM Plan was created based on market assumptions and a forecast of customer interest. Table 2 provides a breakdown of 2017 achievements by program. A full executive summary, which includes both a comparison of 2017 goals versus actuals and cost-effectiveness test results, is provided as Attachment A.

¹ Docket EL13-015, Commission Order December 3, 2013.

² A TRC ratio above 1.0 indicates the benefit outweighs the costs.

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Table 2 – Executive Summary Table of 2017 Actual Achievements

Executive Summary Table					
2017	Electric Participants	Electric Budget	Generator kW	Generator kWh	TRC Ratio
Business Segment					
Lighting Efficiency ³	151	\$417,589	484	3,291,040	1.09
Business Saver's Switch	16	\$33,120	92	217	2.63
Peak and Energy Control	4	\$3,911	326	11,825	36.60
Business Segment Total	171	\$454,620	902	3,303,082	1.18
Residential Segment					
Ground Source Heat Pump ⁴	1	\$3,000	4	2,889	0.40
Home Lighting	4,660	\$111,733	288	2,738,397	3.79
Residential Saver's Switch	1,406	\$196,635	1,089	3,136	5.27
Consumer Education	73,472	\$32,233	N/A	N/A	N/A
Residential Segment Total	79,539	\$343,600	1,381	2,744,422	3.99
Planning Segment					
Regulatory Affairs	N/A	\$11,374	N/A	N/A	N/A
Planning Segment Total	N/A	\$11,374	N/A	N/A	N/A
PORTFOLIO TOTAL	79,710	\$809,595	2,282	6,047,504	1.71

The Status Report shows a successful year for the DSM portfolio. We maintain a well-balanced portfolio of programs and continue to educate customers on the benefits of choosing energy efficiency. Additional details of individual program’s performance are offered in the section below.

³ Table 2 references participation. However, Attachment A will provide Lighting Efficiency as “units” for consistency with our original filing. Moving forward we will continue to show participants.

⁴ Please see section under “Regulatory Affairs” for further information regarding Ground Source Heat Pumps.

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B. DSM Program Portfolio

1. Business Lighting Efficiency

a. Description

The Lighting Efficiency program offers retrofit and new construction rebate incentives to commercial and industrial customers who purchase and install qualifying energy efficient lighting products. Rebates are offered to encourage customers to purchase energy efficient lighting by reducing the up-front costs associated with new lighting equipment.

b. 2017 Program Activity and Results

Our Lighting Efficiency program achieved 75 percent of its energy savings goal and spent 107 percent of its budget; this imbalance is due to more customers participating in higher cost measures. These results highlight the continued challenge of estimating achievement for business lighting due to past changes made to provide rebates for the newest, most efficient technologies. Rebate changes often require time to take hold in the marketplace. However, 2017 also highlights upward momentum on the impact of light emitted diode (LED) technologies while maintaining cost-effectiveness. The addition of new construction rebates as well as the introduction of LED linear tubes in 2018 will continue this momentum. We note rebated and forecasted units in Table 3 below.

Table 3: Business Lighting Efficiency Units

Year	Actual/ Forecasted Units	Additional Information
2014	18,808	Last year of fluorescent rebates
2015	9,766	First year of LED-only
2016	18,416	Achieved
2017	11,700	Achieved
2018	16,599	Supplemental Filing
2019	16,326	Filed

Additionally, we provide rebates available in 2017 as part of Attachment B.

c. 2019 Proposed Changes

We propose modifying rebates offered to customers in 2019 by adding new retrofit rebates for high bay fixtures and reducing rebates for several LED measures. In addition,

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we are updating incremental costs to account for the continued cost decrease of LED technologies. These changes will increase the program's energy savings while improving overall cost-effectiveness. We provide an update to rebates in 2019 as part of Attachment B.

The program budget includes incentives, promotion and administrative costs. The incentives make up the majority of the budget while a smaller amount is allotted to administration and promotion which includes distributor mailings, local trainings and information materials.

The goals were created by evaluating current and historical participation, rebates, incremental costs and cost per kWh per measure. This information was utilized to set the rebate structure and predict expected outcomes the future.

2. Business Saver's Switch

a. Description

Business Saver's Switch is a prescriptive load management program available to commercial customers. The program uses direct load control to cycle customers' rooftop air conditioning units during periods of peak demand, helping to maintain system reliability. Loads are controlled through the use of load control receivers operated remotely via wireless signals. The program is marketed via direct mail, email and our Business Solutions Center.

b. 2017 Program Activity and Results

The Business Saver's Switch program had a successful year and deployed substantially more switches than anticipated in 2017 overspending our forecasted spend. This success was a direct result of customer response to promotional activities. Customers responded strongly to a call center promotion conducted in the spring and summer.

In recent years, the program has had relatively few control events. The program was activated once in 2017. While control seasons in recent years have not been nearly as robust as in the past, we plan to execute at a minimum one control event per cooling season to validate system operations.

c. 2019 Proposed Changes—None

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3. Electric Rate Savings

a. Description

The Electric Rate Savings (ERS) program is offered to business customers to reduce their electric loads during system peak. To qualify, a customer must be able to reduce load by at least 50 kW during Company initiated control events. In return, customers receive a monthly discount on their demand charges and can potentially save as much as 50 percent on their demand charges over the entire year. The ERS program is promoted directly to customers through our account management team and our Business Solutions Center.

b. 2017 Program Activity and Results

Our budget was underspent in 2017. As a result, the TRC shows an increase based on low spend for a program in which additional participation is low. Only new controllable load is counted towards our 2017 DSM activity. ERS, however, has 108 historical participants providing controllable load during system peak when needed.

Every year a program information packet is sent to each participating customer, explaining program changes, reminders of their responsibility as an interruptible customer on a control day and providing historical event data. Additionally, a customer meeting was held to explain program requirements and how customers may be better prepared to meet control obligations. In 2017, we tested the notification system and sent messaging to customers regarding how to prepare for an actual control event. No other events were called.

The main components of the program budget include:

- Administration – This category includes labor costs for internal sales, sales support and fulfillment, marketing administration and planning, equipment installation and maintenance, project planning and implementation.
- Advertising and Promotion – We have budgeted to conduct an annual customer mailing, test event mailings, customer town meetings, and program collateral materials.

c. 2019 Proposed Changes—None

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4. Home Lighting

a. Description

The Home Lighting program offers discounted prices on LED bulbs. Energy efficient lights are an easy and low cost way for customers to save energy and reduce the cost of their monthly electric bills. We promote the Home Lighting program through a variety of channels including bill inserts, digital advertising and point of purchase displays.

b. 2017 Program Activity and Results

The program surpassed the participation and energy savings goals for 2017. The increased achievements were a result of customers looking for ways to reduce their energy bills, responding favorably to promotions and acting on discounted lighting prices.

The number of residential versus business bulbs sold is defined in the table below for the 62,442 bulbs sold in 2017.⁵

Table 4: Home Lighting Achievement

Type of Customer	Number of Bulbs Sold	Percent of Bulbs
Residential	58,718	94%
Business <i>(Generally Small Business)</i>	3,724	6%

Increased spending was a direct result of these additional incentives needed to support this increased participation.

Additionally, in 2017 we partnered with MidAmerican Energy Company on its gas home energy audit program *HomeCheck Assessment*. Through this partnership, MidAmerican delivered the program and installed our energy efficient bulbs in customers' homes in our service area.

c. 2019 Proposed Changes

The MidAmerican *HomeCheck Assessment* is no longer available in 2018. Therefore, we have absorbed the savings into the Home Lighting goal. We have also changed the operating hours used for the portion of Home Lighting that is business customers.

⁵ We further note that only four of these bulbs were CFL's.

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Previously the hours of operation were based on using census data, but we have changed our methodology and are now using actual participant data.

We are proposing a decrease in the program budget as the cost of LEDs have fallen and therefore our incentive amounts can fall commensurately leading to a lower incentive budget.

5. Residential Saver's Switch

a. Description

The Residential Saver's Switch program offers a bill discount to customers who agree to allow the Company to remotely control their central air conditioners during the summer months and their electric water heaters regardless of season. Saver's Switch is a significant component of our load management portfolio. The program is marketed primarily through direct mail.

b. 2017 Program Activity and Results

In 2017, the program over spent its budget while substantially over achieving energy savings targets. This is primarily due to the replacement of switches scheduled for maintenance. Several switches have outlived their useful life and were due for equipment replacement. Approximately 60 percent of the deployed switches were maintenance replacements for outdated hardware in the field.

The program had no control events in 2017 outside a scheduled testing event. While control seasons in recent years have not been nearly as robust as in the past, the Company continues to plan for a minimum of one control event per cooling season to validate system operations.

a. 2019 Proposed Changes—None

C. Additional Demand Side Efforts

1. Trade Partners

We consider our Trade Partners to be contractors, distributors, and manufacturers of energy-efficient equipment. We value our Trade Partners as one of the most important marketing channels for DSM. Trade Partners promote our programs to our customers, verify that the equipment they are installing meets our program specifications and help complete rebate paperwork. We support our Trade Partners through training workshops,

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Account Manager activities, phone support and email communications. Training workshops are utilized during times of significant program change and are held on an as-needed basis.

Our Account Manager in Sioux Falls has an important role in supporting the efforts of our Trade Partners in South Dakota. He is available to meet with Trade Partners for program training, site visits, and help with rebate paperwork.

We have residential and business Trade Relations Managers in Minneapolis who also assist our South Dakota Trade Partners. They provide phone support for questions on our rebate specifications and paperwork, produce email updates to Trade Partners when there is important information to share and are available to travel to South Dakota to provide in-depth program training as needed.

2. Consumer Education

a. Overview

The Consumer Education program is part of the Company's residential program portfolio. The program's focus is to provide customers with simple ways they can make their home more energy efficient while driving them to our portfolio of energy savings programs. We focused efforts in 2017 on three specific tactics: community events, digital outreach and bill communications. Utilizing different tactics is critical to reaching a wide variety of customers.

b. Community Events

The program's primary focus at community events is to drive customers to take "action," whether through a targeted program lead or a direct program signup, and provide customers with information on how they can make their home more energy efficient. Events allow us to help customers, in-person, with energy-related questions and recommended energy efficiency programs and actions that were a fit for their individual homes.

In 2017, the Company participated in three large community events:

- July 14-15: Sioux Falls Jazz Festival, Yankton Trails Park, Sioux Falls
 - We generated 132 targeted program leads and generated 24 direct program signups
- September 9 : Sidewalk Arts Festival, Washington Pavilion, Sioux Falls

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- We generated 219 targeted program leads and generated 47 direct program signups
- November 10-11: Empire Arts and Crafts Show, Fairgrounds Expo Building, Sioux Falls
 - We generated 436 targeted program leads and generated 36 direct program signups for Saver's Switch.

c. Digital Outreach

In addition to face-to-face community outreach, the program has invested in digital kiosks to help reach a wide variety of customers outside of targeted community events. The kiosks are loaded with a video series developed by the company titled, "This Is How," a series of tutorials on how to make simple, no and low-cost energy saving changes to your home. Customers then have the opportunity to text themselves the video to re-watch when they return home to help them implement the changes. There were two main locations customers could locate kiosks in 2017, chosen for ease of access and relevance:

- Sioux Falls Museum of Visual Materials – January 2017 to July 2017
- Washington Pavilion of Arts and Sciences – July 2017 to November 2017

d. Bill Communications

The program also utilizes bill communications via onserts, a cost-effective way to communicate with large groups of residential customers. We also place bill onserts to promote easy ways customers could lower their summer cooling costs.

e. Participation

Participation achievement continues to be measured through various educational opportunities as noted below:

- Sponsored event attendance;
- Program signups generated at sponsored events;
- Program leads generated at sponsored events; and
- Seasonal email campaign/bill onserts.

f. 2019 Program Changes

A refresh of the digital outreach kiosks is planned for 2019 with a continued focus on simple, no- and low-cost energy saving changes to the home.

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3. Regulatory Affairs

a. Overview

The Planning and Administration group manages all DSM regulatory filings, directs and prepares cost-benefit analyses, provides results of energy conservation achievements and prepares cost recovery reports. This group also provides procedures for effectively addressing requirements and complying with the DSM regulatory process.

In 2017, there was a one time charge allocated towards a customer incentive as a result of our March 29, 2017, letter to the Commission requesting the authority to release 2017 DSM plan budget dollars towards a residential customer rebate for a ground source heat pump installed in 2016. We requested this authority since the Ground Source Heat Pump program had been cancelled for the 2017 DSM Plan. On April 18, 2017, the Commission Order allowed the Company to release rebate dollars and claim the energy savings associated in 2017.⁶

As a result, there is a one time customer incentive charge within the regulatory affairs administration budget in 2017. We have filed the cost benefit analysis of this one project and provide a line item within our 2017 Summary to account for the claimed energy savings.

The following notes the Regulatory Affairs Administration budget breakout with this one time charge:

- 79 percent labor; and
- 21 percent customer incentive.

b. 2019 Proposed Changes - None

II. DSM Cost Recovery Report

Cost-effective conservation benefits all of our customers by reducing the need to build new power plants or other generation facilities to meet our customers' electricity needs. Conservation also has environmental benefits, including a reduction in air pollution and greenhouse gas emissions associated with using fossil fuels. This section reports the actual 2017 spending and cost recovery as well as the Company's carrying charge rates.

⁶ Docket No. EL16-018.

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In 2017, the total portfolio spend came in at \$809,595. This amount is eight percent above our approved budget of \$750,625, but falls within the ten percent spend flexibility granted by the Commission.⁷ In addition to DSM expenses, the Company is requesting recovery of \$225,188 in financial incentive earned for our 2017 DSM performance for total recovery of \$1,034,783.⁸

Supportive documentation for this cost recovery request, some of which falls under the category of confidential data, is provided as Attachment C of this filing and includes:

- Calculations of the Carrying Charge Rates in 2017 and found in the 2017 Tracker; and
- Xcel Energy's 2017 DSM Tracker, which documents monthly DSM expenditures and recovered costs.

III. DSM Incentive Report – Calculation Inputs

In accordance with the Commission's October 21, 2011, Order, which approved an incentive of 30 percent of expenditures capped at the approved budget. The Company submits the following 2017 incentive calculation.

Approved 2017 Budget	\$750,625
Actual 2017 Spend	\$809,595

Since the actual expenditure was greater than the approved budget, the incentive was capped at the approved budget amount. The incentive is calculated as follows:

Approved Budget x 30% = Awarded Incentive

\$750,625 x 30% = \$225,188

This incentive is accounted for in our 2017 DSM Tracker included in Attachment C.

⁷ The Commission approved a 10 percent spend flexibility beginning in 2013 as part of the approval of the Company's 2012 DSM Status Report and 2014 DSM Proposed Plan. (Docket No. EL13-017)

⁸ Our final 2017 Tracker notes this amount at [CONFIDENTIAL DATA BEGINS HERE CONFIDENTIAL DATA ENDS HERE]. This includes a true-up from 2016 as defined in Attachment C.

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IV. DSM Cost Adjustment Factor Report

The current DSM Cost Adjustment Factor of \$0.000510 per kWh was implemented on January 1, 2018.⁹ The Company requests a new DSM Cost Adjustment Factor of \$0.000486 per kWh to be effective with the first billing cycle of January 2019.

Supportive documentation for this rate change request, some of which falls under the category of confidential data, is provided as Attachment D of this filing and includes:

- Information specified in South Dakota Administrative Rule 20:10:13:26 regarding the updated DSM Cost Adjustment Factor;
- Forecasted 2017 and 2019 DSM Trackers reflecting the forecasted cost recovery with the current and proposed rates;
- Proposed bill insert notice; and
- Proposed updated tariff sheet in both redlined and clean versions.

The Company requests a new DSM Cost Adjustment Factor of \$0.000486 per customer kWh to be effective with the first billing cycle of January 2019 and to remain in effect through December 2019 or until the Commission approves a new DSM Cost Adjustment Factor. This is a decrease of \$0.000024 per kWh or approximately five percent. The decrease is due to the 2017 adjustment being slightly over recovered in previous years.

In the event that Commission approval of the proposed adjustment is delayed beyond the timeframe needed to implement the rate change by January 1, 2019, the Company will continue to apply the current DSM Cost Adjustment of \$0.000510 per kWh up to the first cycle of the first full billing period following Commission approval of a revised factor.

This proposed factor is calculated to reduce the DSM Tracker balance to \$0 by the end of December 2019. It is based on the forecasted December 2019 unrecovered balance in the Company's DSM Tracker account. This forecasted balance is based on the forecasted January 2019 beginning balance, projected expenditures for 2019 and the forecasted 2019 incentive. The inputs and calculation are shown below.

⁹ Docket EL17-019, Commission Order December 21, 2017.

[CONFIDENTIAL DATA BEGINS HERE]

CONFIDENTIAL DATA ENDS HERE]

The resulting rate is **\$0.000486 per customer kWh**.

We note that the bill onsert for the DSM Cost Adjustment Factor has, in the past, been combined with the South Dakota Infrastructure Rider Rate. Attempts are made to limit the amount of onserts per bill when necessary; this further reduces cost. We will combine in 2018, if timing allows.

V. Summary of 2019 DSM Plan

This section includes a summary of our proposed 2019 Plan. The only change in 2019 will be adjustments to rebates in our Business Lighting program.¹⁰ Additional program opportunities were reviewed for the 2019 DSM plan, however none were found to offer greater value (energy savings and customer potential related to cost) for our customers. We note we are continuing to review new opportunities and will file updates with the Commission as necessary.

Table 4 summarizes our proposed goals and provides updated cost-effectiveness results by program. The total portfolio has a passing TRC Ratio of 1.36. The budget is lower than our 2018 filed budget (at \$774,408) due to rebate level changes described above for our business and residential lighting programs.¹¹ A full executive summary, which includes all cost-effectiveness test results, is provided as Attachment E.

¹⁰ We outline these changes in Attachment B.

¹¹ Docket No. EL17-019

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Table 4 – Executive Summary Table of 2019 Forecast

Executive Summary Table - 2019					
2019	Electric Participants	Electric Budget	Generator kW	Generator kWh	TRC Ratio
Business Segment					
Lighting Efficiency	334	\$389,320	484	3,985,513	1.16
Business Saver's Switch	12	\$37,213	42	107	1.26
Peak and Energy Control	1	\$10,000	99	3,695	4.66
Business Segment Total	347	\$436,533	626	3,989,315	1.17
Residential Segment					
Home Lighting	2,635	\$93,412	154	1,508,018	1.91
Residential Saver's Switch	770	\$187,913	546	1,651	3.24
Consumer Education	68,000	\$21,165	N/A	N/A	N/A
Residential Segment Total	71,405	\$302,490	700	1,509,669	2.43
Planning Segment					
Regulatory Affairs	N/A	\$13,000	N/A	N/A	N/A
Planning Segment Total	N/A	\$13,000	N/A	N/A	N/A
PORTFOLIO TOTAL	71,752	\$752,023	1,326	5,498,983	1.36

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Service of Filings

We request that communications regarding this Application be directed to:

Lynnette Sweet
Records Analyst
Xcel Energy Services Inc.
414 Nicollet Mall, 401-8
Minneapolis, MN 55401
(612) 330-5500
Regulatory.Records@xcelenergy.com

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CONCLUSION

In summary, the Company respectfully requests that the Commission:

- Approve the Company's 2017 DSM Tracker account;
- Approve the incentive of \$225,188 earned for 2017 program performance;
- Approve the proposed 2019 electric DSM Adjustment Factor of \$0.000486 per kWh; and
- Approve the proposed 2019 DSM Plan.

We look forward to continuing these programs in South Dakota. The Company appreciates the interest and efforts of South Dakota policy makers in supporting this DSM portfolio.

Dated: May 1, 2018

Xcel Energy



By:

Steve Kolbeck
Principal Manager –South Dakota