



414 Nicollet Mall
Minneapolis, MN 55401

November 21, 2018

—Via Electronic Filing—

Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: PETITION
LIGHTING TARIFF REVISIONS TO INCLUDE LED OPTIONS
DOCKET NO. E002/M-18-____

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits the attached Petition for approval of several revisions to accommodate additional offerings of Light Emitting Diode (LED) lighting technology for street lighting and protective lighting applications and to close the Street Lighting Service – City of St. Paul tariff.

We have electronically filed this document with the Minnesota Public Utilities Commission, and a summary of the filing has been served on all parties on the Company's miscellaneous electric service list.

Please contact Rebecca Eilers at rebecca.d.eilers@xcelenergy.com or 612-330-5570, or me at lisa.r.peterson@xcelenergy.com or 612-330-7681 if you have any questions regarding this filing.

Sincerely,

/s/

LISA PETERSON
MANAGER, REGULATORY ANALYSIS

Enclosures
c: Service List

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie Sieben	Commissioner
John Tuma	Commissioner

IN THE MATTER OF A PETITION OF
NORTHERN STATES POWER COMPANY
FOR APPROVAL OF REVISIONS TO
LIGHTING TARIFFS TO INCLUDE LIGHT
EMITTING DIODE (LED) OPTIONS

DOCKET NO. E002/M-18-____

PETITION

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission this Petition for approval of tariff revisions to accommodate additional offerings of Light Emitting Diode (LED) lighting technology for street lighting and protective lighting applications and to close the Street Lighting Service – City of St. Paul tariff.

The Commission’s April 8, 2016 Order in Docket No. E002/M-15-920 approved new full service LED street lighting rates designed to reduce bills, decrease maintenance and other expenses, improve energy efficiency, contribute to energy usage and greenhouse gas emissions reduction goals, and improve lighting quality.

We have identified additional LED options for energy-only street lighting service to lighting systems owned by customers and for protective lighting service that could further these same goals. These new offerings are proposed as revisions to the Automatic Protective Lighting Service tariff and Street Lighting Energy Service (Closed) tariff.

Our proposed tariff revisions respond to customer interest in additional LED lighting options and increased energy efficiency. LED technologies have advanced to provide cost reductions and improved performance, light quality and color rendering which will benefit our customers. Our proposed tariff revisions will help customers transition to more energy-efficient lighting options and provide cost savings.

We respectfully request that the Commission approve the Company's proposed tariff revisions described in more detail below. This Petition provides background on the current LED rates and a description of the proposed tariff revisions and rate design.

I. SUMMARY OF FILING

A one-paragraph summary of the filing is attached pursuant to Minn. R. 7829.1300, subp. 1.

II. SERVICE ON OTHER PARTIES

Pursuant to Minn. R. 7829.1300, subp. 2 and Minn. Stat. § 216.17, subd. 3, we have electronically filed this document. A summary of the filing has been served on all parties on the Company's miscellaneous electric service list.

III. GENERAL FILING INFORMATION

Pursuant to Minn. Rules 7825.1400 and 7829.1300, subp. 3, the Company provides the following required information.

A. Name, Address, and Telephone Number of Utility

Northern States Power Company doing business as:
Xcel Energy
414 Nicollet Mall
Minneapolis, MN 55401
(612) 330-5500

B. Name, Address, and Telephone Number of Utility Attorney

James R. Denniston
Assistant General Counsel
Xcel Energy
414 Nicollet Mall, 401 – 8th Floor
Minneapolis, MN 55401
(612) 215-4656

C. Date of Filing

The date of this filing is November 21, 2018. The Company requests these tariff updates become effective 60 days after the Commission Order is issued.

D. Statute Controlling Schedule for Processing the Filing

This Petition is made pursuant to Minn. Stat. § 216B.16, subd. 1, which prescribes general timelines for rate and tariff changes, including but not limited to a requirement of 60-days' notice prior to any rate or tariff change.

Under Commission Rules, the proposed rate change discussed in this Petition falls within the definition of a "miscellaneous filing" under Minn. Rule 7829.0100, subp. 11, since no determination of Xcel Energy's general revenue requirement is necessary. Minn. R. 7829.1400, subp. 1 and 4 permit comments in response to a miscellaneous filing to be filed within 30 days and reply comments to be filed no later than 10 days from the expiration of the original comment period. This permits the Commission to act within the 60-day notice period.

E. Utility Employee Responsible for Filing

Lisa Peterson
Manager, Regulatory Analysis
Xcel Energy
414 Nicollet Mall, 401 – 7th Floor
Minneapolis, MN 55401
(612) 330-7681

IV. MISCELLANEOUS INFORMATION

Pursuant to Minn. R. 7829.0700, the Company requests that the following persons be placed on the Commission's official service list for this proceeding:

James R. Denniston
Assistant General Counsel
Xcel Energy
414 Nicollet Mall, 401 – 8th Floor
Minneapolis, MN 55401
james.r.denniston@xcelenergy.com

Lynnette Sweet
Regulatory Administrator
Xcel Energy
414 Nicollet Mall, 401 – 7th Floor
Minneapolis, MN 55401
regulatory.records@xcelenergy.com

V. EFFECT OF CHANGE UPON XCEL ENERGY REVENUE

We do not anticipate a significant change in revenue as a result of these tariff revisions.

VI. DESCRIPTION AND PURPOSE OF FILING

A. Background

The Commission's April 8, 2016 Order in Docket No. E002/M-15-920 approved LED rates for the full service Street Lighting System Service tariff as a conversion path to replace older lighting technologies. This new lighting option was designed to reduce bills, decrease maintenance and other expenses, improve energy efficiency, contribute to energy usage and greenhouse gas emissions reduction goals, and improve lighting quality.

We have identified additional LED options for protective lighting service and for the closed energy-only street lighting service to lighting systems owned by customers that could further these same goals. While the closed tariff is not consistent with our requirements to meter new lighting systems, the Company supports allowing an LED option for customers currently on the rate, so that the customers can take advantage of the lower fuel costs associated with LED.

These new LED options are proposed as revisions to the Automatic Protective Lighting Service tariff and the Street Lighting Energy Service (Closed) tariff. These lighting services are currently:

- **Automatic Protective Lighting Service (Rate Code A07)**
The Company provides lighting equipment, maintenance and energy at flat monthly rates for area and directional lighting with High Pressure Sodium (HPS) and Mercury Vapor (MV) lamps at different wattage levels. Customers are also billed the applicable fuel cost rate for lighting energy usage.
- **Street Lighting Energy Service (Closed) (Rate Code A32)**
The Company provides energy-only service at a flat monthly rate for HPS and MV lamps at different wattage levels. The customer owns a Company-approved street lighting system. Customers are also billed the applicable fuel cost rate for lighting energy usage.

B. Proposed Revision to Automatic Protective Lighting Service

We propose to add LED rate options comparable to the existing lamps in the Area Units section of Automatic Protective Lighting (APL) Service as shown on Attachment A. The LED wattages comparable to HPS lighting for APL service are shown in Table 1 below and are based on the specific LED fixtures the Company expects to provide for this service. These LED wattages are proposed to be represented by a range of LED wattages to accommodate future standardization of

available LED wattages. The LED wattage levels for APL are slightly different from those for the Company’s previously approved LED street lighting tariffs to recognize the different type of equipment used for protective lighting.

Table 1
Comparable HPS and LED Wattages

HPS Wattage	LED Wattage	LED Tariff Range
100W	43W	30-45W
250W	157W	110-165W

Consistent with current practice for APL lamp and fixture replacements and to minimize incremental labor costs for conversions, LED fixtures will be installed after the failure of current HPS and MV lamps in service. We currently provide service to approximately 20,000 APL Area Units in Minnesota and anticipate a complete replacement with LED lighting over the next several years. Although this conversion approach may not produce significant short-term maintenance cost savings, it will reduce future maintenance costs after LED fixtures are installed, by removing the need to replace malfunctioning ballasts or broken glass lamp coverings that are common maintenance requirements for HPS and MV lighting fixtures. This cost reduction is included in proposed LED rates as an expense savings of \$0.53 per month based on the Company’s assumption for existing Street Lighting System Service LED fixtures, recognizing similarities in the HPS fixtures being replaced and LED fixtures being installed.

The base rate system allocation reductions shown in Table 2 below are the result of the reduction in energy and demand usage when HPS fixtures are replaced with LEDs, which reduces the allocation of system resources required for lighting. This results in a credit to each proposed LED APL monthly rate. Also recognized in the proposed rates, since the LED fixtures will replace current fixtures prior to the end of their useful life, is the revenue requirement for the required incremental capital investment. This higher revenue requirement associated with the capital cost offsets a portion of the energy and maintenance savings. The result is a slight decrease in the monthly rate and results in an overall bill savings of 7-12% when combined with fuel savings. The anticipated rate impact and bill impact estimates are outlined in Table 2.

These adjustments are consistent with our approach in the initial LED streetlight rates approved in Docket No. E002/M-15-920. Attachment B includes the workpapers for the LED Automatic Protective Lighting Service rates. These workpapers provide a summary of the adjustment a more detailed breakout of the saving components.

Table 2
LED Area Protective Lighting Rate Design

		NSP-MN	
		Per HPS/LED Street Light Equivalent	
RATE IMPACT		100W/43W	250W/157W
2019 HPS Automatic Protective Lighting Service Prices ¹		\$7.71	\$12.30
<i>Maintenance Savings</i>		(\$0.53)	(\$0.53)
<i>System Allocation Cost Reduction</i>		(\$0.83)	(\$1.68)
<i>Incremental Capital Revenue Requirement</i>		\$1.32	\$1.63
<i>LED Fixture Rate Impact - Company Owned Street Lights</i>		(\$0.04)	(\$0.58)
Proposed LED Automatic Protective Lighting Service Prices		\$7.67	\$11.72
BILL IMPACT (Estimated)		100W/43W	250W/157W
Current HPS Monthly Average Bill Per Street Light - APL		\$8.66	\$14.80
<i>LED Fixture Impact on HPS Street Lighting Rate</i>		(\$0.04)	(\$0.58)
<i>Fuel Clause and Rider Savings Estimate</i>		(\$0.60)	(\$1.22)
Total Monthly Bill Impact		(\$0.64)	(\$1.80)
Proposed LED Monthly Average Bill Per Street Light - APL		\$8.02	\$13.00
<i>Percentage Savings (increase)</i>		7.4%	12.1%

¹ Automatic Protective Lighting Service Rates proposed to be effective January 1, 2019 as filed in Docket No. E002/GR-15-826

Finally, the lower energy usage of the LED fixtures, in addition to yielding some base rate energy savings for customers as described above results in a reduction in the Fuel Clause charge cost. Since fuel is a separate line on the customer's bill, this impact is not included in the monthly rate, but customers will see the saving reflected in the fuel clause cost line of their bill. The estimated Fuel Clause charge saving is also illustrated in Attachment B in the Fuel & Resource Adjustment Savings Estimate lines of the workpapers. All benefits included, a customer receiving a new 100W equivalent LED fixture will see a monthly savings of \$0.64 or 7.4% relative to the current HPS 100W bill. The LED bill savings for the Automatic Protective Lighting Service are more favorable than Company's roadway lighting program due to a relatively lower fixture cost associated with this type of LED lighting fixture.

C. Proposed Revision to Street Lighting Energy Service (Closed)

We also propose to add LED rates to the Street Lighting Energy Service (Closed) tariff, shown on Attachment A. Although this tariff is closed to new fixtures, the proposed rates will allow customers to upgrade existing HPS and MV fixtures already

served on this tariff to LED fixtures. Street Lighting Energy Service – Metered will continue to be required for new customer-owned lighting systems.

Customers have expressed an interest in acquiring the light quality and cost saving advantages of LED lighting, without waiting until they can phase in meters and switch over to metered energy-only lighting service. LED availability under customers’ current flat rate lighting service will provide a reasonable transition path to metered service.

Five LED base rates based on wattage ranges are proposed, which is consistent with the current Street Lighting System Service tariff. The proposed LED rates are the same as the corresponding HPS rates to allow an even billing and revenue recovery transition from the existing HPS lighting units that represent 90 percent of current lights on the tariff.

Customers using the LED option will have reduced fuel cost charges from the lower LED energy usage, even though the proposed tariff revision does not address the base rate level. Since the rate is closed, additional analysis is required for the non-fuel portion of the rate. The Company intends to revisit the base rate level for the closed service at the time of its next rate case.

Table 3
LED Street Lighting Energy Service Bill Savings

	<30W	30-45W	50-75W	110-165W	200-250W
Estimated Annual Bill Savings	\$5.47	\$7.65	\$10.30	\$14.88	\$23.23

D. Proposed Revision to Street Lighting Service – City of St. Paul

This Petition also proposes to close the Street Lighting Service – City of St. Paul tariff to new lighting units. Available only to the City of St. Paul, this tariff is a hybrid of lighting services that provides for shared ownership and maintenance. This lighting service arrangement provides for the City to own and maintain the lamp units, lamps, photocells and glassware, and for the Company to own and maintain the distribution system and fixture hangers, and to furnish energy. The tariff was established over 40 years ago and is inconsistent with other lighting services and a statewide tariff approach. Closing this tariff would allow an orderly transition to other lighting services. The City has reduced the number of lighting units on this tariff over the last ten years from about 2400 lighting units to under 1700 lighting units. This proposal would retain the tariff and its availability to existing lighting applications, but

discontinue its availability to new lighting fixtures. This approach also provides a transition path to LED lighting through other available lighting services.

E. Street Lighting System Service

In this Petition, the Company also provides notice that LED lighting options for Street Lighting System Service are planned for expansion to post-top fixtures, in addition to the more common application to the cobra head fixture design. The tariff does not include a rate distinction for these two types of fixtures, which have been available for HPS lamps.

F. Legal Standard of Review

The legal standard of review for this Petition is found in Minn. Stat. § 216B.03, which states that “every rate made, demanded, or received by any public utility, or by any two or more public utilities jointly, shall be just and reasonable.” We believe that our Petition has met that standard. The proposed tariff modifications incorporate the maintenance and other expense-allocated cost savings and could result in overall customer cost-savings. The rates proposed are just and reasonable, satisfying the statutory requirements.

G. Proposed Tariff Sheets

The Company proposes to make permanent the additional LED lighting options discussed in this Petition. Redline and clean versions of the following tariff sheets show the proposed modifications, included as Attachment A:

- Section 5, 22nd Revised Sheet No. 14 (A07 rate code)
- Section 5, 23rd Revised Sheet No. 76 (A32 rate code)
- Section 5, 26th Revised Sheet No. 80 (A37 rate code)
- Section 5, 15^h Revised Sheet No. 81 (A37 rate code)

H. Implementation and Ongoing Operation

The Company proposes that the proposed tariff modifications become effective and available to customers 60 days after the Commission Order is issued.

CONCLUSION

The Company respectfully requests that the Commission approve tariff revisions to accommodate additional offerings of Light Emitting Diode (LED) street lighting and protective lighting options, and our proposal to close the City of St. Paul lighting tariff

to new fixtures, as discussed in this Petition. These new lighting options respond to increasing customer interest in LED options.

Dated: November 21, 2018

Northern States Power Company

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie Sieben	Commissioner
John Tuma	Commissioner

IN THE MATTER OF A PETITION OF
NORTHERN STATES POWER COMPANY
FOR APPROVAL OF REVISIONS TO
LIGHTING TARIFFS TO INCLUDE LIGHT
EMITTING DIODE (LED) OPTIONS

DOCKET NO. E002/M-18-____

PETITION

SUMMARY OF FILING

Please take notice that on November 21, 2018, Northern States Power Company, doing business as Xcel Energy, filed with the Minnesota Public Utilities Commission a Petition for approval of tariff revisions to accommodate additional offerings of Light Emitting Diode (LED) lighting technology for street lighting and protective lighting applications and to close the Street Lighting Service – City of St. Paul tariff.

Redline

**AUTOMATIC PROTECTIVE LIGHTING SERVICE
 RATE CODE A07**

Section No. 5
~~21st~~^{22nd} Revised Sheet No. 14

AVAILABILITY

Available to all types of customers except for municipal street lighting purposes.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage, plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and / or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

<u>Designation of Lamp</u> (Lumens)	<u>Monthly Rate Per Unit</u>	
Area Units		
100W High Pressure Sodium	\$7.57	R
175W Mercury (1)	\$7.57	R
250W High Pressure Sodium	\$12.07	R
400W Mercury (1)	\$12.07	R
<u>30-45W Light Emitting Diode (4,000)</u>	<u>\$7.67</u>	N
<u>110-165W Light Emitting Diode (14,000)</u>	<u>\$11.72</u>	N
Directional Units		
250W High Pressure Sodium	\$14.37	R
400W High Pressure Sodium	\$17.98	R
1,000W Mercury (1)	\$27.82	R

(1) Available to existing installations only.

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

SERVICE INCLUDED IN RATE

Company shall own, operate, and maintain the lighting unit including the fixture, lamp, ballast, photoelectric control, mounting brackets, and all necessary wiring. Company shall furnish all electric energy required for operation of the unit.

FUEL CLAUSE

Bills are subject to the adjustments provided for in the Fuel Clause Rider.

(Continued on Sheet No. 5-15)

Date Filed:	11-02-15 ¹¹⁻²¹⁻¹⁸	By: Christopher B. Clark	Effective Date:	10-01-17
		President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/ GR-15-826M-18-		Order Date:	06-12-17

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STREET LIGHTING ENERGY SERVICE (CLOSED)
RATE CODE A32

Section No. 5
~~22nd~~23rd Revised Sheet No. 76

AVAILABILITY

Available for year-round illumination of public streets, parkways, and highways by electric lamps mounted on standards where customer owns a Company approved ornamental street lighting system complete with standards, luminaires with globes, lamps, and other appurtenances, together with all necessary cables extending between standards and to point of connection to Company's facilities as designated by Company. Service is limited to existing lighting systems being served under this schedule.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage, plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and / or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

<u>Designation of Lamp</u>	<u>(Lumens)</u>	<u>Monthly Rate per Luminaire</u>	
100W Mercury		\$2.47	
175W Mercury		\$3.68	
250W Mercury		\$4.99	
400W Mercury		\$7.77	
700W Mercury		\$12.92	
1,000W Mercury		\$17.98	
50W High Pressure Sodium		\$1.38	
70W High Pressure Sodium		\$1.74	
100W High Pressure Sodium		\$2.32	
150W High Pressure Sodium		\$3.17	
200W High Pressure Sodium		\$4.22	
250W High Pressure Sodium		\$5.34	
400W High Pressure Sodium		\$8.12	
750W High Pressure Sodium		\$13.94	
F72HO Fluorescent		\$3.61	
<u><30W Light Emitting Diode (2,500)</u>		<u>\$1.74</u>	<u>N</u>
<u>30-45W Light Emitting Diode (4,000)</u>		<u>\$2.32</u>	<u>N</u>
<u>50-75W Light Emitting Diode (6,000)</u>		<u>\$3.17</u>	<u>N</u>
<u>110-165W Light Emitting Diode (14,000)</u>		<u>\$5.34</u>	<u>N</u>
<u>200-250W Light Emitting Diode (25,000)</u>		<u>\$8.12</u>	<u>N</u>

(Continued on Sheet No. 5-77)

Date Filed: ~~44-02-15~~11-21-18 By: Christopher B. Clark Effective Date: ~~10-01-17~~
 President, Northern States Power Company, a Minnesota corporation
 Docket No. E002/~~GR-15-826~~M-18- Order Date: ~~06-12-17~~

STREET LIGHTING SERVICE - CITY OF ST. PAUL

Section No. 5

(CLOSED)

~~25th~~^{26th} Revised Sheet No. 80

RATE CODE A37

AVAILABILITY

Available to the City of St. Paul for furnishing, maintaining, and operating certain electrical connections, lines, and appurtenances thereto, and supplying electric current for city street lighting.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage, plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and / or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

<u>Designation of Lamp</u>	<u>Monthly Rate per Luminaire</u>
100W High Pressure Sodium	\$5.70
150W High Pressure Sodium	\$6.39
250W High Pressure Sodium	\$8.95

R
R
R

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

D

FUEL CLAUSE

Bills are subject to the adjustments provided for in the Fuel Clause Rider.

RESOURCE ADJUSTMENT

Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider.

ENVIRONMENTAL IMPROVEMENT RIDER

Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

SURCHARGE

In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

The following are terms and conditions for service under this tariff.

LATE PAYMENT CHARGE

Any unpaid balance over \$10.00 is subject to a 1.5% late payment charge or \$1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

(Continued on Sheet No. 5-81)

Date Filed:	11-02-15 ¹¹⁻²¹⁻¹⁸	By: Christopher B. Clark	Effective Date:	10-01-17
		President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/ GR-15-826M-18-		Order Date:	06-12-17

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STREET LIGHTING SERVICE – CITY OF ST. PAUL

Section No. 5

(CLOSED)

~~14th~~15th Revised Sheet No. 81

RATE CODE A37

OTHER PROVISIONS

This schedule is also subject to provisions contained in Rules for Application of Street Lighting Rates.

Date Filed: ~~11-02-15~~11-21-18

By: Christopher B. Clark

Effective Date: ~~10-01-17~~

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/~~GR-15-826M-18-~~

Order Date: ~~06-12-17~~

Clean

**AUTOMATIC PROTECTIVE LIGHTING SERVICE
 RATE CODE A07**

Section No. 5
 22nd Revised Sheet No. 14

AVAILABILITY

Available to all types of customers except for municipal street lighting purposes.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage, plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and / or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

<u>Designation of Lamp</u> (Lumens)	<u>Monthly Rate Per Unit</u>	N
Area Units		
100W High Pressure Sodium	\$7.57	
175W Mercury (1)	\$7.57	
250W High Pressure Sodium	\$12.07	
400W Mercury (1)	\$12.07	
30-45W Light Emitting Diode (4,000)	\$7.67	N
110-165W Light Emitting Diode (14,000)	\$11.72	N
Directional Units		
250W High Pressure Sodium	\$14.37	
400W High Pressure Sodium	\$17.98	
1,000W Mercury (1)	\$27.82	

(1) Available to existing installations only.

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

SERVICE INCLUDED IN RATE

Company shall own, operate, and maintain the lighting unit including the fixture, lamp, ballast, photoelectric control, mounting brackets, and all necessary wiring. Company shall furnish all electric energy required for operation of the unit.

FUEL CLAUSE

Bills are subject to the adjustments provided for in the Fuel Clause Rider.

(Continued on Sheet No. 5-15)

Date Filed: 11-21-18	By: Christopher B. Clark	Effective Date:
	President, Northern States Power Company, a Minnesota corporation	
Docket No. E002/M-18-		Order Date:

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

**STREET LIGHTING ENERGY SERVICE (CLOSED)
 RATE CODE A32**

Section No. 5
 23rd Revised Sheet No. 76

AVAILABILITY

Available for year-round illumination of public streets, parkways, and highways by electric lamps mounted on standards where customer owns a Company approved ornamental street lighting system complete with standards, luminaires with globes, lamps, and other appurtenances, together with all necessary cables extending between standards and to point of connection to Company's facilities as designated by Company. Service is limited to existing lighting systems being served under this schedule.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage, plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and / or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

<u>Designation of Lamp</u>	<u>(Lumens)</u>	<u>Monthly Rate per Luminaire</u>	
100W Mercury		\$2.47	
175W Mercury		\$3.68	
250W Mercury		\$4.99	
400W Mercury		\$7.77	
700W Mercury		\$12.92	
1,000W Mercury		\$17.98	
50W High Pressure Sodium		\$1.38	
70W High Pressure Sodium		\$1.74	
100W High Pressure Sodium		\$2.32	
150W High Pressure Sodium		\$3.17	
200W High Pressure Sodium		\$4.22	
250W High Pressure Sodium		\$5.34	
400W High Pressure Sodium		\$8.12	
750W High Pressure Sodium		\$13.94	
F72HO Fluorescent		\$3.61	
<30W Light Emitting Diode (2,500)		\$1.74	N
30-45W Light Emitting Diode (4,000)		\$2.32	N
50-75W Light Emitting Diode (6,000)		\$3.17	N
110-165W Light Emitting Diode (14,000)		\$5.34	N
200-250W Light Emitting Diode (25,000)		\$8.12	N

(Continued on Sheet No. 5-77)

Date Filed: 11-21-18 By: Christopher B. Clark Effective Date:
 President, Northern States Power Company, a Minnesota corporation
 Docket No. E002/M-18- Order Date:

**STREET LIGHTING SERVICE - CITY OF ST. PAUL
(CLOSED)
RATE CODE A37**

Section No. 5
26th Revised Sheet No. 80

AVAILABILITY

Available to the City of St. Paul for furnishing, maintaining, and operating certain electrical connections, lines, and appurtenances thereto, and supplying electric current for city street lighting.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage, plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and / or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

<u>Designation of Lamp</u>	<u>Monthly Rate per Luminaire</u>
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150W High Pressure Sodium	\$6.39
250W High Pressure Sodium	\$8.95

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

FUEL CLAUSE

Bills are subject to the adjustments provided for in the Fuel Clause Rider.

RESOURCE ADJUSTMENT

Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider.

ENVIRONMENTAL IMPROVEMENT RIDER

Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

SURCHARGE

In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

The following are terms and conditions for service under this tariff.

LATE PAYMENT CHARGE

Any unpaid balance over \$10.00 is subject to a 1.5% late payment charge or \$1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

(Continued on Sheet No. 5-81)

Date Filed: 11-21-18

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-18-

Order Date:

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

**STREET LIGHTING SERVICE – CITY OF ST. PAUL
(CLOSED)
RATE CODE A37**

Section No. 5
15th Revised Sheet No. 81

OTHER PROVISIONS

This schedule is also subject to provisions contained in Rules for Application of Street Lighting Rates.

Date Filed: 11-21-18

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-18-

Order Date:

Company-Owned LED Street Lighting System Service Rate Design

Rate Code A07

Monthly LED Street Lighting Rate Design Summary

	NSP-MN	
	Per HPS/LED Street Light Equivalent	
	100W/43W	250W/157W
2019 HPS Automatic Protective Lighting Service Rates (A07) 1	\$7.71	\$12.30
Maintenance Expense Impact (Savings)	(\$0.53)	(\$0.53)
System Allocation Cost Reduction	(\$0.83)	(\$1.68)
Incremental Capital Revenue Requirement	\$1.32	\$1.63
Net LED SL Fixture Rate Impact - Company Owned Street Lights	(\$0.04)	(\$0.58)
Proposed Monthly LED Automatic Protective Lighting Service Rates	\$7.67	\$11.72
Current HPS Monthly Average Bill Per Street Light - A07	\$8.66	\$14.80
LED Fixture Impact on HPS Street Lighting Rate	(\$0.04)	(\$0.58)
Fuel & Resource Adj. Savings Estimate	(\$0.60)	(\$1.22)
Total Monthly Bill Impact (savings)	(\$0.64)	(\$1.80)
Proposed LED Monthly Average Bill Per Street Light - A07	\$8.02	\$13.00
Percentage Savings (increase)	7.4%	12.1%

Annual Impact of LED Fixtures on the A30 Street Lighting System Service Rate

	NSP-MN	
	Per HPS/LED Street Light Equivalent	
	100W/43W	250W/157W
Maintenance Savings		
Relamp Expense Savings	\$0.00	\$0.00
Service Order Expense Savings	\$6.36	\$6.36
Total Maintenance Savings	\$6.36	\$6.36
Monthly Savings (increase)	\$0.53	\$0.53
System Allocation Cost Reduction		
Energy Related System Allocation Cost Reduction	\$8.89	\$18.00
Demand Related System Allocation Cost Reduction	\$1.05	\$2.13
Total System Allocation Cost Reduction	\$9.94	\$20.13
Monthly Savings (increase)	\$0.83	\$1.68
Incremental Capital Revenue Requirement	(\$15.78)	(\$19.61)
Monthly Savings (increase)	(\$1.32)	(\$1.63)
LED SL Base Rate Savings (Increase)	\$0.52	\$6.88
Monthly Savings (increase)	\$0.04	\$0.58
Fuel & Resource Adj. Savings Estimate	\$7.23	\$14.64
Monthly Savings (increase)	\$0.60	\$1.22
Annual Bill Savings - LED Street Lights	\$7.75	\$21.52
Monthly Savings (increase)	\$0.64	\$1.80

1 Automatic Protective Lighting Service Rates proposed to be effective January 1, 2019 as filed in Docket No. E002/GR-15-826

CERTIFICATE OF SERVICE

I, Lynnette Sweet, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota

xx electronic filing

XCEL ENERGY MISCELLANEOUS ELECTRIC SERVICE LIST

Dated this 21st day of November 2018

/s/

Lynnette Sweet
Regulatory Administrator

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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