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Minneapolis, MN 55401

**PUBLIC DOCUMENT –
NOT PUBLIC DATA HAS BEEN EXCISED**

April 22, 2020

—Via Electronic Filing—

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: SUPPLEMENTAL COMMENTS
INTEGRATED DISTRIBUTION PLAN
DOCKET NO. E002/M-19-666

Dear Mr. Seuffert:

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission the enclosed Supplemental Comments in accordance with the Commission's April 1, 2020 NOTICE OF EXTENDED REPLY AND SUPPLEMENTAL COMMENT PERIOD.

Xcel Energy maintains the information contained in Attachment B as a trade secret pursuant to Minn. Stat. §13.37 (1)(b) based on its economic value from not being generally known and not being readily ascertainable by proper means by other persons who can obtain value from its disclosure or use, and because it contains confidential customer and grid security data.

Please note Attachment B is marked as "Non-Public" in its entirety. Pursuant to Minn. R. 7829.0500, subp. 3, we provide the following description of the excised material:

1. **Nature of the Material:** Spreadsheet showing individual feeder reliability including information on customer count per feeder.
2. **Authors:** Thanh Huynh and Pablo Martinez
3. **Importance:** The Company work product is proprietary to the Company and includes confidential customer and grid security data.
4. **Date the Information was Prepared:** April 22, 2020

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Pursuant to Minn. Stat. § 216.17, subd. 3, we have electronically filed this document with the Minnesota Public Utilities Commission, and copies have been served on the parties on the attached service list. Please contact Jody Londo at (612) 330-5601 or jody.l.londo@xcelenergy.com or me at (612) 330-6064 or bria.e.shea@xcelenergy.com if you have any questions regarding this filing.

Sincerely,

/s/

BRIA E. SHEA
DIRECTOR, REGULATORY & STRATEGIC ANALYSIS

Enclosures
c: Service List

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Valerie J. Means	Commissioner
Matthew Schuerger	Commissioner
Joseph K. Sullivan	Commissioner
John A. Tuma	Commissioner

IN THE MATTER OF THE DISTRIBUTION
SYSTEM PLANNING FOR XCEL ENERGY

DOCKET NO. E002/M-19-666

SUPPLEMENTAL COMMENTS

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission these Supplemental Comments in accordance with the Commission's April 1, 2020 NOTICE OF EXTENDED REPLY AND SUPPLEMENTAL COMMENT PERIOD.

I. CERTIFICATION AND RIDER RECOVERY

As we detailed in our Reply Comments, our advanced grid intelligence and security (AGIS) proposal is consistent with public policy and certification is appropriate, sufficiently defined, and an available regulatory mechanism for the Company's advanced grid plan. We have met the Commission's requirements for certification, and our proposed AGIS and advanced planning tool (APT) investments should therefore be found eligible for recovery in the transmission cost recovery (TCR) rider under Minn. Stat. § 216B.2425.

A. A Contested Case is not Necessary

We remain willing to provide additional time beyond the June 1 statutory deadline for the Commission to provide clear direction on our proposal. We, however, continue to believe a contested case is unwarranted. Despite ample opportunity to engage in discovery, few parties have done so. It is therefore unclear that further process is needed prior to a decision on certification. We also oppose the Department's suggested additional comment period for parties to comment on potential customer protections that should accompany a certification decision, if the Commission does not refer our proposal to the Office of Administrative Hearings (OAH) for a contested case. Again, we believe such questions are more appropriately reserved for a cost-recovery proceeding. Parties, including the Department, moreover, have already had that opportunity – and several have offered such information into the

record. Another round of comments would be duplicative and only serve to delay a certification decision.

As discussed in the IDP and our Reply, certification of AGIS and the APT are in the public interest. Our proposal brings the right technologies—including the advanced metering infrastructure (AMI) and other complementary AGIS investments—at the right time for Minnesota. The AMI we proposed is not only equipped to capably read customer meters and replace our currently obsolete system, it will also unlock significant opportunities to transform energy usage in Minnesota and harness operational efficiencies and important engineering insights that will reshape our service to customers over time.

Certification is sufficiently defined and an available regulatory tool for the Company's proposed investments to begin advancement of the grid, and we have met the Commission's standard for certification. While we have some flexibility in the implementation schedule we have set out, delaying certification pending a rulemaking proceeding or contested case would create uncertainty regarding the Commission's desired direction. Given that the Commission already has laid out a process for certification that has successfully vetted projects in past proceedings, we do not think additional process is necessary at this point. Specifically, were a decision on certification substantially delayed, the Company's planned implementation schedule would, at best, be compressed, potentially increasing costs and eroding benefits for customers, and at worst, portions of the projects would potentially need to be abandoned altogether. As also noted in our Reply, a further implication of this would be loss of the associated economic benefits that the significant capital investment and incremental jobs this initiative would contribute to Minnesota's economy. That said, to ensure that we continue to stay in sync with the Commission's guidance in this important proceeding, we note that we have stopped work on the Minnesota project.¹ We will be prepared to continue and/or alter our work plans, consistent with the Commission's future direction.

¹ We clarify that the AGIS-related work we have underway is to implement the Advanced Distribution Planning System (ADMS) and Time of Use (TOU) Pilot as previously certified by the Commission, and preparatory work for the broader AMI deployment we have proposed. This is in contrast to the Department's March 17, 2020 Comments (at page 20) that imply the Company is fully pursuing the AGIS initiative as proposed for certification in our November 2019 IDP. We will continue the ADMS and TOU Pilot work, but have halted the preparatory work on AMI.

B. Much of What the Department Includes in its Scope is not Relevant to Certification

We appreciate the additional information and clarity the Department provided in Reply Comments about the contested case it recommends. That said, we continue to believe we have met all of the Commission's requirements for certification and a contested case is not needed. Much of what the Department suggests should be covered in a contested case is already included in the record we provided with the Integrated Distribution Plan (IDP), which met the heightened requirements set out in the Commission's September 27, 2019 Order Authorizing Rider Recovery, Setting Return on Equity, and Setting Filing Requirements in Docket No. E002/M-17-797, requiring the Company to, among other things, provide the Commission with "a business case and comprehensive assessment of qualitative and quantitative benefits to customers" related to AGIS, but only "[i]f and when Xcel requests cost recovery" for such investments. Although we agree it is appropriate for other parties to thoroughly review and vet this information, a contested case is unnecessary absent a finding that the "proceeding involves contested material facts,"² something no party has demonstrated.

Further, some of the information the Department suggests is needed to make a certification decision is not relevant to certification or even cost recovery related to the Company's proposed AGIS and APT investments. For example, rather than limiting its request to the AGIS and APT investments, the Department suggests a contested case include the Company's entire \$2.5 billion five-year Distribution budget in its scope. That conflicts with the Commission's August 30, 2018 Order setting the Company's IDP requirements, which states:

Commission review of annual distribution system plans are not meant to preclude flexibility for Xcel to respond to dynamic changes and on-going necessary system improvements to the distribution system; nor is it **a prudence determination of any proposed system modifications or investments.**
[Emphasis added]

Additionally, matters such as the specific procedures for remote connect/disconnect, specific customer notice plans or materials, and specific formats for providing customers with customer usage data and rate schedules implementation details do not require review in a contested case. We have provided information about the direction we intend— through our customer strategy – as well as more specifics on these and other implementation and post-implementation customer programs and services. Deciding to certify the AGIS and APT investments overall does not require making

² Minn. R. 7829.1000.

detailed decisions regarding specific programs, services, and formats. These matters are more appropriately addressed in parallel with implementation – which would also be consistent with AMI implementations by other utilities.

C. Rider Recovery is Appropriate

As discussed in our Reply, suggestions that certification and potential rider recovery for the proposed advanced grid investments is inappropriate reflect a fundamental misunderstanding of the purpose of riders in general and the TCR rider in particular. This includes the OAG citing to certain costs, such as fuel costs, that are regularly recovered through riders and contrasting the AGIS investments as something other than essential to providing utility service – and that such investments require complex policy decisions regarding the value of the benefits against the cost of the advanced technology. It also includes the Department’s position that rider recovery for the AGIS Initiative is an inappropriate forum for review of a cost recovery request because it is “new technologies that can fundamentally change the concept of electric service.” These positions ignore the public policy objective set out by the legislature in Minn. Stat. 216B.2425, subd 2(e), which specifically directs the identification of technologies like the AGIS portfolio and APT for potential rider recovery:

...a utility operating under a multiyear rate plan approved by the commission under section [216B.16](#), subdivision 19, shall identify in its report investments that it considers necessary to modernize the transmission and distribution system by enhancing reliability, improving security against cyber and physical threats, and by increasing energy conservation opportunities by facilitating communication between the utility and its customers through the use of two-way meters, control technologies, energy storage and microgrids, technologies to enable demand response, and other innovative technologies.

Further, as noted by the Commission in a June 2010 Report to the Legislature, the creation of many riders was “prompted by the imposition of policy mandates, as well as a desire to recover very large capital expenditures for single projects (or a group of related projects) or to simply encourage certain types of expenditures.”³ Projects with capital expenditures and policy complexities similar to or even greater than the AGIS and APT investments have routinely been recovered through riders over long periods of time. These projects include the Metro Emissions Reduction Project (MERP) through the Emissions Reduction rider, CapX2020 transmission projects through the TCR rider, and numerous wind projects through the Renewable Energy Standard rider. Certifying the AGIS and APT investments, therefore, is not only consistent

³ June 2010 Report to the Legislature: Utility Rates Study as Required by Laws of Minnesota, 2009, Chapter 110.

with the legislature's direction that investments necessary to modernize the distribution system be eligible for recovery through the TCR rider, but also the Commission's precedent of rider recovery for similarly-scaled statutorily-authorized projects.

D. Rider Proceedings – not Certification Decisions – are Intended to Assess Prudence

In Reply, the Department asserts that the TCR process is not a prudence review. That conflicts with the plain language of Minn. Stat. § 216B.16, subd. 7b(d):

Upon receiving a filing for a rate adjustment pursuant to the tariff established in paragraph (b), the commission shall approve the annual rate adjustments provided that, after notice and comment, the costs included for recovery through the tariff **were or are expected to be prudently incurred and achieve transmission system improvements at the lowest feasible and prudent cost to ratepayers.** [Emphasis added]

Consistent with this statute, and as discussed in our Reply Comments, in its decision certifying the advanced distribution management system (ADMS), the Commission clarified that its decision to certify ADMS did not imply any decision regarding recovery of the project's costs:

The Commission's decision represents only a finding that the project is consistent with the requirements of section 216B.2425. Any rider recovery of costs associated with the project will be determined in response to a petition for rider recovery of those costs under Minn. Stat. § 216B.16, subd. 7b. **At that time, Xcel will have the burden of establishing the prudence of the costs it requests to recover through the TCR Rider.** [Emphasis added]

The Department also stated that use of the TCR Rider would equate to a piecemeal review and disjointed recovery of project costs – pointing to the 2017 and 2019 TCR proceedings where we sought cost recovery for the first advanced grid project the Commission ever certified – ADMS;⁴ and further, that certification is not acting as a cost cap. First, the 2017 TCR was the first time we sought cost recovery for a certified advanced grid investment, so was new and a learning process for all. Part of those learnings resulted in a new set of requirements for future advanced-grid cost-recovery requests (*See* September 27, 2019 ORDER AUTHORIZING RIDER RECOVERY, SETTING RETURN ON EQUITY, AND SETTING FILING REQUIREMENTS in Docket No. E002/M-17-797). Second, the 2019 TCR Rider proceeding is still underway, with

⁴ The Department also referred to our 2019 TCR proceeding, but that case is currently pending with Department Comments not due until August 4, 2020.

Comments on our Petition not due until August 4, 2020, so it is speculative and would be presumptive to assume anything about the 2019 or future TCR proceedings.

Third, in response to the Department's statement that certification is not acting as a cost cap – certification of grid-modernization investments is not intended to, nor would it be appropriate to, establish or act as a cost cap. Certification is intended to signal a general level of support for a grid-modernization investment and, as such, is essentially a gate-keeping function for investments to become eligible (but not approved) for recovery through the TCR Rider in a subsequent and separate proceeding. As noted above, even after a project is certified, the Company still bears the burden of proving the prudence of investments for cost recovery—whether through the TCR Rider or base rates.

Certification and cost recovery are two separate concepts – with a cost recovery request following an affirmative certification determination. We have not claimed that the six-month certification process would provide the Company cost recovery assurance as claimed by the Department.⁵ Rather, we said certification would afford the Company assurance *that it can proceed with the certified projects and seek recovery under the TCR Rider*. With this statement, we further noted the Commission would additionally have the opportunity to review actual costs and expenditures as part of the Company's subsequent TCR or general rate case filings, when the Company seeks cost recovery for the projects.

II. MISCELLANEOUS

A. Biennial IDP Cadence with an Ongoing Annual Requirement

In Comments, the Department supported our request for a biennial IDP filing cadence and requested that we explain the feasibility of providing annual distribution budget information and non-wires alternative (NWA) analysis in our Reply (Recommendation 2). We provided this information and additionally requested that, if the Commission approved the biennial filing cadence with an annual reporting requirement, the Commission also allow the Company to request certification of advanced grid investments on an annual basis due to the rapid pace and changes underway with respect to grid advancement. In Reply, the Department reiterated its Recommendation 2. We appreciate the Department's support for a biennial filing cadence and are open to providing the recommended budget and NWA information on an annual basis. To the extent the Commission agrees to a biennial IDP cadence

⁵ Department Comments at page 22, referring to the Company's December 23, 2019 response to MPUC Information Request No. 1.

but that limited information is needed in non-IDP (even-numbered) years, we respectfully request the Commission to also authorize the Company to submit advanced grid certification requests in those years.

B. Due Date for ADMS Compliance

An outcome of the most recent TCR Rider proceeding (Docket No. E002/M-17-797) was a requirement for the Company to submit an initial compliance report on ADMS implementation and annual reports thereafter – delegating to the Executive Secretary the authority to set the timing and procedure/docket of the annual report. In our November 2019 IDP, we noted our intent to combine the information requirements of the initial and ongoing annual ADMS reports into a single January 25, 2020 filing, and as part of a procedural proposal in the IDP, we requested the Executive Secretary establish a January 25th due date for the ongoing annual ADMS reports to begin January 25, 2021. We also proposed the annual ADMS reports be filed in the most recent docket of future IDPs. The Department did not initially comment on our request, but in Reply noted that a January report timing would not align with the November filing dates of the TCR and IDP dockets, and that information contained in the ADMS annual compliance filing would likely relate to and inform both dockets.

First, the ADMS report is an annual reporting obligation. There is no established or required filing date for TCR Rider Petitions; we have generally been filing them on a biennial cadence in recent years due to regulatory lag (2015, 2017 and 2019). Therefore making the ADMS compliance report a companion filing to the TCR is not practicable. With respect to the IDP, we have requested a biennial filing cadence, which is well-supported by parties, including the Department. If the Commission approves our request – and even if it is accompanied with limited annual updates of budget information and/or NWA analysis as recommended by the Department, the ADMS compliance information will have no correlation to the IDP in even-numbered years.

Second, we believe the content of the ADMS compliance report, which is largely financial and project status and forecasts, lends itself better to a calendar year view.⁶

⁶ Order Point No. 7 of the Commission's September 27, 2019 Order in Docket No. E002/M-17-797 set the annual ADMS report requirements as follows:

- a. The actual costs spent on the ADMS implementation for the reporting period, and for the work to date, broken down in the categories of: design (including software configuration and software interfaces), hardware, software, testing and implementation – broken down by internal and external labor.*
- b. An estimate of the total quantity of work completed on the ADMS Project identified by major category. In the event work cannot be quantified, major tasks completed shall be provided.*
- c. The additional functional requirements installed to achieve ADMS usage functions (including AMI, FAN, FLISR or*

We continue to believe it would be most timely to provide this information in January, just after the close of the previous calendar year. That said, if the Commission accepts the Department's recommendation for a November 1 filing date, we clarify that the financial information we would provide would be from the end of Q3, or September 30th. If the Commission prefers some other timing, we note that from a financials perspective, we would need 25-30 days after the end of a calendar year quarter to be able to present the most current actuals and forecasts.

Finally, no party commented on the procedural aspect of our proposal. We clarify that we continue to propose that we submit the annual ADMS compliance filing in the most recently filed IDP docket number.

C. Non-Wires Analysis Process

In response to the Department regarding future non-wires alternatives (NWA) analyses, we agree that reducing the project threshold is not appropriate at this time. As discussed in our Reply, it would significantly add to NWA analysis workload, and we believe would merely result in finding that a greater number of NWA solutions are not cost effective at this time. We also agree with the Department that proposing a NWA pilot November 1, 2020 may be premature and would likely not achieve the outcomes the City of Minneapolis desires. We note that we are continuing to work with the City to understand their objectives for this pilot.

D. Locational Reliability and Equity

The Department requested the Company to respond to the ELPC/VS recommendation for a new IDP requirement focused on locational reliability and equity. The Commission decided that the issue of locational reliability and equity that arose in the Performance Based Rates proceeding be addressed in the Annual Service Quality Reports proceedings. We agree and believe that is the appropriate forum for that discussion. We already discuss our reliability management and programs in the IDP (see Section VII), which includes a summary of information from our most recent Annual Service Quality Report under the Minnesota Rules. We are happy to provide a summary of this issue from those proceedings in future IDPs. There is no need however, to add a new or separate IDP requirement for this, as we already provide a reliability summary from those reports.

*IVVO modules), their percent of system implementation or integration, and cost incurred to date.
d. The estimated anticipated expenses in coming reporting periods, both capital and O&M.*

E. Fault Location Isolation and Service Restoration Sensitivity Analysis

As noted in our Reply Comments, we have worked to conduct a sensitivity analysis responsive to Fresh Energy's initial comments requesting additional information about whether and how we had included the effects of momentary outages in our benefits analysis. We provide the results of our analysis as Attachment A and the FLISR sensitivity model we developed as Attachment B to this Reply. In summary, when we originally estimated the cost-benefit of FLISR to moderate the impact of feeder level outages for our customers, we purposefully chose what we believe to be conservative assumptions so as to not overstate the benefits of this new technology. In refining our analysis to include the impacts of momentary outages, we also refined other inputs in order to present a range of expected benefits. Our conclusion from this sensitivity analysis is that, when including the effects of momentary outage events in combination with our original conservative assumptions, the NPV goes down, but remains positive at 1.17 (compared to our original NPV of 1.31). Toggling some of the other inputs such as population growth, patrol time improvement, and customer revenue outage impacts to be less conservative, yet reasonable – while also including the effects of momentary outages – substantially increases the NPV to as much as 2.41.

CONCLUSION

We appreciate the opportunity to provide these Supplemental Comments. We respectfully request the Commission accept our Integrated Distribution Plan, certify our proposed advanced grid investments, and shift to a biennial cadence for filing future Integrated Distribution Plans.

Dated: April 22, 2020

Northern States Power Company

Fault Location Isolation and Service Restoration (FLISR) Benefits Sensitivities Analysis Summary

We used our CMO Calculator, which is rooted in the Lawrence Berkeley National Laboratories (LBNL) work for their ICE Calculator, to estimate the economic benefits of FLISR to our customers. With our FLISR cost-benefit analysis, we purposefully chose what we believe were conservative assumptions to avoid any perception of overstating the benefits of this new technology. As noted in our April 10, 2020 Reply Comments, we evaluated the assumptions underlying our FLISR benefits analysis in response to Fresh Energy's March 17, 2020 Comments asking about our treatment of momentary outages. In this document, we walk through our assumptions and additional sensitivities we offer in these Supplemental Comments to help illustrate our conservative approach. Although our initial evaluation did not directly address momentary interruptions, our conclusion from the evaluation of benefits outlined in this document is that, even when momentary interruptions are factored in, the overall value or relative cost-benefit ratio for FLISR does not change significantly.

As discussed in our April 10, 2020 Reply Comments, we undertook a sensitivity analysis of seven inputs, including the impact of momentary outages. We also developed a model demonstrating how these inputs could change the overall value of the FLISR CBA, which we provide as Attachment B. The model contains the original values (Variables Tab, column B, rows 5-10) used for each input and provides an opportunity for the user to modify the values in column C (Adjustable), rows 5-10. The output from use of the Adjustable functionality can be found in the Benefits section, cell H5 – and in the Adjustable-CBA Based on User Inputs section in cells E21 through G29). We have noted the values that we recommend based on our engineering judgement for each input (Variables Tab, column D, rows 5-10), and the associated impact of each of these inputs in the corresponding column E.

This sensitivity analysis results in a range of benefits from a net present value (NPV) of \$86 million¹ to approximately \$190 million,² with a corresponding CBA ratio range from 1.10 to 2.41 (cell B40).³ We discuss each of the seven inputs below.

¹ Based on the original values in column B, rows 5-9 and including impact of momentary outages using the 100 percent small C&I option.

² Based on the Company's Recommended Values in column D, rows 5-9.

³ Based on the combination of Xcel Energy Original Values and "Small C&I 18% discount" in Cell C10. The 1.10 ratio will calculate and show in cell G29.

A. Recommended Escalation of LBNL Values

LBNL pointed out in their ICE Calculator documentation that the outage values are based on 2016 dollars – and suggested that those values be escalated not only up to today's values, but also to future values. Our original analysis did not escalate the values. Applying an annual non-labor inflation rate of 2.07 percent increases the NPV by over \$38 million.⁴

B. Population Growth

We did not take into account any growth in our number of customers after 2016 in our original analysis, which is relevant to the calculation of customer minutes out. The Minnesota population as of July 2019 was 5,639,632, with an expected annual average population growth rate of 0.48 percent.⁵ For an additional point of reference, the most populous counties in our service territory, Hennepin and Ramsey, are expected to grow at 0.73 percent and 0.61 percent, respectively. While the population growth will not evenly distribute and match across each of the FLISR feeders, we believe using the state's expected annual average growth rate is a reasonable proxy for the general growth rate on our feeders over time. Applying the 0.48 percent Minnesota rate to our analysis increases the NPV by \$5.6 million.

C. Customer Revenue Loss Assumption

LBNL does not specify whether the revenue impacts reported by the utility customer companies participating in their survey reflected losses before or after taxes. Our original analysis took a conservative position by reducing the LBNL customer reported gross impact by a factor to account for taxation. We have since confirmed that LBNL does not suggest such a reduction be made. Removing the discount calculation from our original analysis increases the NPV by \$21 million.

D. Customer Class Allocation

While the ICE Calculator also provides outage impact values for large commercial customers, our original analysis assumed all commercial customers were small, which is conservative in that revenue losses associated with outages for large commercial

⁴ The forecast inflation rate of 2.07% is based on IHSMarkit forecast of the Producers Price Index Finished Goods.

⁵ See <https://www.census.gov/quickfacts/MN>

customers are generally larger than losses from residential and small commercial customers. If we were to instead apply our overall large:small commercial ratio to each feeder in our planned implementation of FLISR, the NPV increases by \$7 million. If you combine the customer revenue loss assumption change and the customer class allocation change as discussed above, the NPV increases by \$30 million.⁶

E. Patrol Time Reduction

Patrol times to identify the cause of the outage can vary greatly depending on the length of the line, the amount of vegetation, whether the patrolling is during daylight hours, location of the line from roads, and traffic considerations. Because of the complexities associated with these numerous variables, our initial analysis of FLISR used a patrol time reduction of 10 minutes. Our engineering judgement is that it would be reasonable to assume the average reduction in patrol time will exceed 15 minutes. The effect of this change in the sensitivities model is an increase to the NPV by over \$2 million.

F. Frequency of Successful Operations

Our original analysis assumed that the FLISR technology would successfully operate 75 percent of the time to recognize the impact of feeder reconfigurations for construction and occasional equipment issues. Our experience with automated switching is that it successfully operates in the 75 to 85 percent range, and based on our engineering judgement we believe it is reasonable to expect the newer FLISR technology to at least operate in the higher end of that range. Increasing the FLISR availability to 85 percent increases the NPV by \$13 million.

G. Momentary Interruption Impact

As observed by Fresh Energy, we did not include the impact of momentary interruptions in our original analysis. To evaluate the impact of momentary outages, we estimated the number of momentary outages based on the assumed number of FLISR devices per feeder and a FLISR design that assumed each section of line would have equal probability of experiencing an outage event. We then assumed a five-minute outage length to each momentary outage, and applied the same CMO value for a five minute outage. As FLISR ramps up, the length of a momentary outage is

⁶ The value of these two variables combined is greater than the sum of each on its own.

expected to be closer to two minutes; therefore, we believe a five-minute momentary outage length to be another conservative assumption. In the sensitivities model, this input results in a decrease to the NPV of \$17 million using our original residential-small commercial Customer Class input assumption. Changing this to instead use the Customer Class sensitivity value discussed in the Customer Class Allocation input above, the NPV would decrease by only \$11.5 million. Note that in order to properly evaluate the variables, the same option is required for Revenue Loss Assumption/Customer Class and Momentary Interruption Impact.

In summary, when momentary events are included in the analysis, the NPV does drop, but remains positive at 1.17 (compared to our original NPV of 1.31). However, toggling some of the other inputs to be less conservative, yet reasonable, more than offsets this decrease – increasing the NPV to as much as 2.41.

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2. **Authors:** Thanh Huynh and Pablo Martinez
3. **Importance:** The Company work product is proprietary to the Company and includes confidential customer and grid security data.
4. **Date the Information was Prepared:** April 22, 2020

[PROTECTED DATA BEGINS

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CERTIFICATE OF SERVICE

I, Jim Erickson, 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

Docket Nos. E002/M-19-166

Dated this 22nd day of April 2020

/s/

Jim Erickson
Regulatory Administrator

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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_19-666_Official
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