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January 27, 2020

—Via Electronic Filing—

Ryan Barlow
Acting Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: SUPPLEMENTAL COMMENTS
DISTRIBUTION SYSTEM – HOSTING CAPACITY ANALYSIS REPORT
DOCKET NO. E002/M-19-685

Dear Mr. Barlow:

Northern States Power Company, doing business as Xcel Energy, submits these Supplemental Comments to the Minnesota Public Utilities Commission in accordance with the Commission's January 14, 2020 Notice establishing a supplemental comments period regarding our 2019 Hosting Capacity Analysis (HCA) report. We focus these supplemental comments on the main points, commitments, and proposals we made in Reply Comments, with one exception. We additionally respond to a question we received in our 2019 Integrated Distribution Plan Docket (IDP) No. E002/M-19-666 asking the reasons we continue to use DRIVE instead of Synergi for our hosting capacity analysis. We believe information such as this is more appropriately addressed in the subject docket, so with the comments period still open, we took the opportunity to include the information in our supplemental comments where it will be available for all parties.

A. Purpose of the HCA

Some parties have suggested our HCA should be more like HCA in states such as California or New York, both of which are actively developing and advancing alternative regulatory frameworks and competitive DER markets and do not necessarily align with the current Minnesota regulatory framework or statewide standard interconnection process. As such, our Reply Comments observed that the Commission may wish to further clarify the purpose of the HCA to avoid potentially conflicting objectives or misplaced expectations.

B. Expanding HCA to Consider Load

We believe load characteristics of DER are best handled within the distribution planning/study process where load has always been the focus and should not be brought into the annual HCA filing where the focus is generation capabilities. To provide relevant and usable information about an increase in hosting capacity due to a change in load requires specific information about the load's operational characteristics. Without this information, the analysis would be theoretical in nature, and thus would provide no practicable or usable information beyond the generic, at best, potential for a one-to-one increase. In summary, we do not believe this sort of analysis will provide the broad benefits that parties are looking for, and that this information is better placed within our existing distribution planning/study process(es).

Additionally, performing a load analysis as suggested by some parties would require a different set of inputs than a generating hosting capacity analysis. As discussed in our Reply Comments, this would be a completely different analysis that would have to be analyzed separately from the generation hosting capacity. Also as discussed further in the Security and Privacy Considerations section of our Reply Comments, publishing a load map would compromise grid security and customer privacy and security.

We believe load analysis and planning – and assessment of distribution system investments – are appropriately separate and apart from an annual hosting capacity analysis and not contemplated by the current legislative framework. In the case of a load analysis for purposes of informing public policy discussions and decisions regarding beneficial electrification, we believe a focused and specific analysis would be necessary – after engaging with appropriate stakeholders on the scope, objectives, assumptions, and inputs. We are open to further discussion about performing such a study if the Commission believes it will be helpful toward state energy policy goals.

C. Pre-Application Data and More Frequent Updates

The Department requested that we develop a proposal to provide monthly, quarterly, and semi-annual HCA updates, including cost estimates, which we committed to provide in conjunction with our 2020 HCA filing. The Department also requested that we prepare an analysis on how to integrate the pre-application data report with the HCA; to the extent the Commission agrees with the Department, we will provide an analysis that examines fully integrating pre-application data to the HCA in conjunction with our 2020 HCA filing.

D. Grid and Customer Data Security, Privacy and Confidentiality

We fully supported our non-public treatment of certain data in our HCA filing, and provided further support in our Reply Comments. Our protection of grid and customer data in the 2019 HCA is both responsible and appropriate. We are happy to further discuss the security and privacy issues raised in the HCA docket with the Commission. We are happy to engage with the Commission in a further dialogue about grid data, and grid and customer security, privacy, and confidentiality. However, that discussion should involve all utilities, relevant experts with a role in protecting critical infrastructure, and customers.

E. Stakeholder Outreach

We notified and invited over 500 relevant individuals to a stakeholder workshop and post-workshop survey. While the participation was less than we hoped, we believe it was not due to a lack of communication or effort on our part. That said; for 2020, we intend to start earlier and are hopeful that our communications, informal engagement with stakeholders, and demonstrated action based on feedback will spur more interest and participation. Our first workshop will be in March 2020 and focus on DRIVE, specifically the new combined DRIVE method. The second stakeholder workshop will be in the April/May timeframe where we intend to discuss the technical assumptions and inputs used in our HCA and engage more deeply on the HCA Heat Map and tabular results tools.

F. The Hosting Capacity Tool

As we have stated, we believe the Electric Power Research Institute (EPRI) DRIVE tool is currently the best tool to conduct our HCA. DRIVE provides accurate results in relation to other HCA methods and tools, is continuously evaluated and improved upon by EPRI, and has been updated with new features that are available for our 2020 HCA. One of the most significant new features is the combined DRIVE method, which we propose to discuss in more detail in the March stakeholder meeting, along with any other new DRIVE features that we are contemplating for the 2020 HCA. Instead of providing another comparison of DRIVE to other available HCA models, we propose to report in the 2020 HCA on any substantive industry advancements or significant changes we have observed in industry practices regarding hosting capacity analyses.

The question we received regarding DRIVE and Synergi suggested we might have cost savings from using Synergi for hosting capacity analysis, because we already

employ it for our system planning and distribution load-flow functions and asked that we explain the reasons we continue to use DRIVE. While Synergi can also be used to conduct an HCA, and some utilities use it that way, we believe DRIVE is a better tool. It is specifically designed to conduct HCAs, its analysis is more granular than Synergi, and DRIVE is updated and improved annually based on user feedback and input (annual version releases).

To tangibly demonstrate some of the reasons we believe DRIVE is a better tool, we provide a couple of examples: (1) DRIVE has 13 limiting criteria violation thresholds (we use eight of these), while Synergi has only four criteria thresholds; and (2) Synergi lacks any potential protection violations that are included in DRIVE (Additional Element Fault Current, Breaker Relay Reduction of Reach, Reverse Power Flow, and Unintentional Islanding), which we believe are important criteria thresholds for an HCA. Further, EPRI conducts annual DRIVE meetings and quarterly webcasts to educate users and solicit feedback, while there is only one general annual user meeting for Synergi. In our experience, DRIVE has been more responsive to modification requests than Synergi. Because we already have Synergi in-house, we might have savings in terms of software costs by also using it for our HCA. However, we have already licensed the DRIVE tool, and there could be additional costs associated with using Synergi for HCA – so any software cost savings are theoretical. And as we have discussed, we believe DRIVE’s functionality and user responsiveness outweigh any theoretical savings from switching to DRIVE.

G. Mitigation Options Analysis

As discussed in our Reply Comments, the special mitigation options analysis we conducted with EPRI’s help was complex, novel, and resource intense – and we believe, one of the first attempts in the industry at automating a mitigation assessment for hosting capacity. We believe this work demonstrates that the mitigations analysis we do as part of our HCA provides comparable value in a more cost- and resource-efficient manner.

H. Sensitivity Analysis

The sensitivity analysis we have produced to-date has been for two of the most impactful factors (voltage and power factor). We have also produced an analysis that shows the effect of load and generation on hosting capacity for various locations. At this time, the only other factor we believe we could potentially adjust would be the increment at which we add generation to the model in our analysis. While we could do more iterations with more increments, it would not alter the hosting capacity

significantly; it would essentially just provide a more granular value. We therefore believe there is limited value in adding this to the HCA analysis at this time, and that our resources are better focused on more substantive advancements such as potentially increasing the frequency of the analysis. We propose the Commission not expand this requirement for future HCAs.

Similarly, at the Commission's direction, we conducted a case study on varying generation and load at our Watertown substation feeder WTN062, with 20 different scenarios. While the case study was informative, we believe there would be limited value in repeating this case study, even if conducted on a different feeder. As such, we propose the Commission not carry this compliance requirement forward for future HCAs.

I. Accuracy Assessments

We and others have observed comparing DRIVE results to actual interconnection studies provides little value because they are not an apples-to-apples evaluation. Our 2019 comparison of DRIVE to Synergi showed that the results correlated well, and evaluations by San Diego Gas and Electric (SDG&E) and EPRI have reached similar conclusions. We agree it will be important to establish an ongoing plan to ensure accuracy of the HCA results once the framework, parameters, and objectives for the ongoing HCA are confirmed and/or modified, and therefore propose the Commission not carry-forward the legacy accuracy assessment requirements for future HCAs.

J. Legacy Compliance Requirements

Consistent with the Department's recommendation, we support and respectfully request the Commission reevaluate all legacy compliance requirements from prior Orders. Our HCA has significantly advanced over time, and some of the legacy requirements are no longer relevant or overlap with newer requirements.

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 all parties on the attached service lists. Please contact me at bria.e.shea@xcelenergy.com or 612-330-6064 if you have any questions regarding this filing.

Sincerely,

/s/

BRIA E. SHEA
DIRECTOR, REGULATORY & STRATEGIC ANALYSIS

c: Service List

CERTIFICATE OF SERVICE

I, Lynnette Sweet, hereby certify that I have this day served copies of the foregoing document on the attached lists 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 No. E002/M-19-685

Dated this 27th day of January 2020

/s/

Lynnette Sweet
Regulatory Administrator

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