



Xcel Energy Distributed Generation Engineering Batch/Cluster Study Guidelines

Applicable to Northern States Power Minnesota

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1.0 Scope

This document sets forth guidelines by which multiple distributed energy resource (DER) interconnection requests may be studied in the MN DIP System Impact Study as provided for under MN DIP 1.8.3 as a single group (i.e. "batch" or "cluster") in lieu of individual applications. A potential advantage to clustering studies is that impacts, and costs can be investigated once, without having to re-perform similar analyses for every unique project in a queue. This presents a potential time and resource savings for the Company ("Area EPS Operator") and in turn the Interconnection Customer(s). There are also potential disadvantages from a batch or cluster System Impact Study, which can cause increased costs and delays to perform System Impact Studies for those who are not first in queue among those projects in a given batch of System Impact Studies.

2.0 Limitations and General Considerations

These Guidelines have several limitations and general considerations:

1. The batch System Impact Study only applies to "deemed complete" Interconnection Applications that are continuously sequential in the same study queue on the Area EPS Operator's electrical distribution system. Interconnection Customers requesting transmission level access shall apply to the appropriate Transmission Provider or Regional Transmission Operator. Even if there are continuously sequential projects in the same queue, batches or clusters that are subject to a common System Impact Study may be broken into two or more smaller study batches for the purposes of this process.
2. The Area EPS Operator can allow an exception to this general guideline that the Interconnection Applications need to be continuously sequential in queue. For example, if there are several large projects in queue, but they are prevented from being continuously sequential by a smaller project also in queue that would not be impacted by the results of the System Impact Study. For example, queue positions 1, 2, 4, and 5 may be 1 MW each. Queue position 3 is a 2kW rooftop system for which the Area EPS Operator will not need to perform any different Distribution Upgrades regardless of whether queue positions 1 and 2 go forward and regardless of the results of the System Impact Studies for those ahead in queue.
3. Batches are based upon electrical interdependence of continuously sequential queued applications and are generated at the feeder level, or, in some cases, the transformer or substation level at the Area EPS Operator's discretion. Clusters of applications above this level of aggregation are too geographically and electrically disparate and the batch Study Process provides no practical benefit.
4. The batch Study Process should not result in deviations from the standard interconnection procedures in terms of Area EPS Operator engineering review schedules for prior milestones such as completeness, initial, or supplemental review. MN DIP does have provisions for requests of extensions of time, and those MN DIP provisions should be followed.
5. Batch study eligibility is by mutual agreement between the Area EPS Operator and each of the Interconnection Customer(s) that desire to be part of the batch System Impact Studies. An Interconnection Customer must agree in writing to inclusion of their project(s) within a given study batch. If a set of applications is eligible for group study but one or more Interconnection Customer(s) elects not to proceed with the batch or cluster System Impact Study, the Study Process will proceed under the MN DIP serial review process, or multiple smaller study groups may need to be created.

6. The Area EPS Operator is not responsible for administering cost sharing among multiple Interconnection Customers for batch System Impact Studies. A single study cost will be provided for the group; the Interconnection Customers are responsible for providing agreements to allocate study costs among themselves and together to timely provide executed System Impact Study Agreements and pay to the Area EPS Operator 100% of the estimated costs within the required MN DIP timeframe for payment of the System Impact Study. If some of the participants have paid a portion of the amount due by the due date, but the total due amount among all participants has not been timely paid, or if every participant has not timely provided an executed System Impact Study Agreement, then the Area EPS Operator will provide refunds for the partially paid amounts and no batch System Impact Study will be performed. The projects will then move forward serially (not in a batch) through the System Impact Study, following the MN DIP process.

7. The batch or cluster System Impact Study will determine which type(s) of Interconnection Facilities, Distribution Upgrades, or where applicable Network Upgrades, are needed in order to accommodate each of the projects in the batch or cluster. The first project in queue among those in the batch or cluster will be studied first, followed in sequential order by each of those later in queue, with the assumption that all ahead in queue will proceed with their project at the maximum available capacity.

8. The summary or redacted results of the batch System Impact Study may be shared with all Interconnection Customers that participate in the batch System Impact Study, subject to each Interconnection Customer signing an NOA that would have been signed to receive the results and redacted version of any System Impact Study. The Attachment "A" to the System Impact Study Agreement will include a provision that allows all participants in this batch System Impact Study to see all project information of all other Interconnection Customer projects in this batch System Impact Study that are reflected in the study results.

9. If a batch System Impact Study is performed, the results are only valid for the first in queue among the participants in that batch, and in sequential order for all others participating in this batch System Impact Study until one of the participants decides not to proceed with its project, or its Interconnection Application is cancelled. In that event, the batch System Impact Study is no longer valid for any later in queue project in the batch System Impact Study. Any such project will need the Interconnection Customer to fund a new and separate System Impact Study. If applicable, that Interconnection Customer may seek to participate in a new batch System Impact Study. Please note that under this scenario, participation in a batch System Impact Study may increase the timeframe and cost to any such batch participant for completing the System Impact

Study step of the MN DIP process. The Area EPS Operator will not provide any refund of the batch System Impact Study costs to any participant in the batch System Impact Study.

10. The Area EPS Operator reserves the right to decline to perform a batch System Impact Study if in its sole determination such study would not comport with safety concerns, reliability concerns, Good Utility Practice, or if such a study would not be a productive use of time and resources.

11. A goal of the batch System Impact Study is that this process will not contribute to delays for those behind the clustered projects in the queue if all projects in the cluster do not cancel or withdraw.

12. The following provisions should be included as part of Attachment "A" to the System Impact Study Agreement:

This System Impact Study is a cluster study as allowed at tariff sheet 10-180, MN DIP§ 1.8.3. The projects that are in this cluster study, in sequential queue order, are as follows:

Project Identification (Case Number)	Project name	Nameplate Capacity in Application

For this System Impact Study Agreement to go into effect for this cluster set of projects, the following technical data provisions apply:

- A. Consistent with tariff sheet 10-233, par. 8.0 of the System Impact Study Agreement (SISA), a separate Statement of Work (SOW) has been issued to the Interconnection Customer showing the Interconnection Customer's proportional share of the expense of the cluster System Impact Study as conveyed by the batch study participants to the Area EPS Operator.
- B. Each project above needs to have a signed SISA, with full payment as set forth in the sows associated with its SISA, delivered to the Area EPS Operator on or before _____. Failure of any of these projects to meet this deadline for signing and funding the SISA will result in the cluster SISA not being available to this set of projects and in this event any amounts for this cluster SISA that have been paid will be refunded.

- C. The cluster System Impact Study will, for each project that is the subject of the cluster, provide individual project results. This will help allow the owners of each project to determine whether each project should proceed.
- D. The Area EPS Operator can share with each of the projects in this cluster study each other's project information as contained in reported results from the cluster System Impact Study.
- E. If an earlier in queue project in this cluster System Impact Study decides to cancel or withdraw, then those that are later in queue to the withdrawn or cancelled project cannot rely on the results of the cluster System Impact Study.

13. These are general guidelines with the intent to help better implement the batch or cluster System Impact Studies. Given the nature of these guidelines, these can be open to variances as we gain further insight and experiment on how best to approach cluster or batch System Impact Studies.

3.0 Group/Batch Study Process

3.1 Identifying Study Batches

Formation of study batches will be contemplated in two scenarios, as outlined below.

1. Batch initiated by Area EPS Operator request: When the Area EPS Operator observes two or more Interconnection Applications at the same feeder or substation which are in engineering review/study simultaneously, it may initiate a batch study request to the Interconnection Customer(s) in order to more expeditiously clear the interconnection queue. Agreement from each Interconnection Customer in the queue is required. If any Interconnection Customer does not wish to proceed with a batch study, the individual projects in queue will be reviewed and analyzed serially in accordance with the applicable statewide procedures and the Area EPS Operator's standard Tariffs and business practices.
2. Batch requested by Interconnection Customer(s): When an Interconnection Customer requests that the Area EPS Operator reach out to those sequential to it in queue for a batch System Impact Study, the Area EPS Operator may reach out those other Interconnection Customers to determine if there is mutual interest in pursuing a batch System Impact Study. If there is an affirmative response, the Area EPS Operator will request that the Interconnection Customers contact each other but will not be responsible for further coordination among interested Interconnection Customers. These entities must proceed as detailed under the process and timelines in this guideline. If there is not an affirmative response, the Area EPS Operator will not pursue the matter further and the requesting Interconnection Customer must keep to the MN DIP timelines and procedure.

3.2 Batch Study Process

Potential batch study projects shall initially proceed in their respective process track, i.e. simplified, fast track, or study. Upon being deemed complete, the Area EPS Operator may evaluate whether a viable batch exists and at its discretion may notify the affected Interconnection Customer(s). At the time of notification, the Area EPS Operator may provide a good faith estimate of System Impact Study costs for the study group. The Interconnection Customer(s) shall have twenty (20) Business Days from this notification to provide their agreement and submit payment for their portion of the good faith estimated study costs. Upon receiving agreement and payment from all Interconnection Customers, the Area EPS Operator shall proceed with a System Impact Study in accordance with the process and procedures outlined in the applicable state rules and Tariffs.

Following completion of any System Impact Studies, the Area EPS Operator may provide a high-level summary of study results, commensurate with the requirements for protection of Confidential Information. If the Area EPS Operator identifies a need for additional facilities along with a supporting facilities study, the individual projects shall move to individual Facilities Study Agreements as per the MN DIP, but the timing of these will be by queue order.

If no Interconnection Facilities are required, the Area EPS Operator shall provide Interconnection Agreements and good faith estimates to the interconnection group study customers consistent with MN DIP requirements following completion of the batch System Impact Study.

If any participant in the batch System Impact Study decides to not proceed with its project, not timely sign and fund its Facilities Study Agreement, not sign and timely fund its Interconnection Agreement, or otherwise withdraw its project or cause its project to be cancelled, the Area EPS Operator will notify those batch System Impact Study participants that are later in queue and follow the MN DIP process for next steps.

