Solar*Rewards Community

Overview of System Impact Study: Interconnection Process Training

Last Updated 10.8.2020

Disclaimer

This PPT Manual is frequently revised.

Please use the web version **only**,

To ensure the most up-to-date information.

Looking for a specific page or step? Try searching for keywords using Ctrl + F

System Impact Study

- Step: In Review
- Action Items:
  - System Impact Study eSign
    - SOW and Agreement
  - System Impact Study Fee ($12,000)
- Step: Submitted
  - Xcel Energy will provide results within 35 business days
  - Results will be available in the Portal

Feeders/Substations at or Nearing Capacity

- As of Q3 2020: ~1,063 MW of projects in the S*RC program
- All gardens located on 165 out of approximately 1200 feeders in Minnesota; 15%
- This concentration of DER on this subset of feeders/substation is resulting in many feeders and substation nearing or hitting capacity available for DER interconnection

Feeders/Substations at or Nearing Capacity

- **Limits** being hit are:
  - Substation transformer limits
  - Largest available conductor or equipment thermal limits
  - Steady state overvoltage after the feeder is built out to largest available conductor
  - Aggregate voltage fluctuation after the feeder is built out to largest available conductor
  - Protection and coordination on small transformers

Feeders/Substations at or Nearing Capacity

- Types of Notices: (Reviewed in depth on following slides)
  1. MN DIP **Phase 2** System Impact Study Notice – Optional curtailment
  2. MN DIP **Phase 2** System Impact Study Notice – Project curtailment NOT an Option
  3. MN DIP **Phase 2** System Impact Study Notice – No Capacity Available
  4. MN DIP **Feeder** Capacity Notice

Types of Notifications

1. MN DIP Phase 2 System Impact Study Notice – Optional curtailment
   - Phase 1 study completed
   - Curtailed capacity available
   - Substation upgrades beyond feeder level required to obtain additional capacity
- Study to determine substation and distribution upgrades needed to obtain capacity

Types of Notifications - Continued

2. MN DIP Phase 2 System Impact Study Notice – Project curtailment NOT an Option
   - Phase 1 study completed
   - Curtailed capacity not available
   - Substation upgrades beyond feeder level required to obtain additional capacity
- This situation is driven by changes in system configurations or characteristics
- Study to determine substation and distribution upgrades needed to obtain capacity

Types of Notifications - Continued

3. MN DIP Phase 2 System Impact Study Notice – No Capacity Available
   - No Phase 1 study performed
   - "No Capacity" – constraint known from prior in queue study
   - Substation upgrades beyond feeder level required to obtain additional capacity
- No study results are available as no Phase 1 study was performed for the project
- Phase 2 Study needed to determine substation and distribution upgrades needed to obtain capacity

Types of Notifications - Continued

4. MN DIP **Feeder** Capacity Notice

- In development
- Phase 1 study may or may not have been performed
- Feeder limited by:
  - Largest available conductor or equipment thermal rating
  - Steady state overvoltage after the feeder is built out to largest available conductor
  - Aggregate voltage fluctuation after the feeder is built out to largest available conductor
- (Continued on following slide)

Types of Notifications - Continued

4. MN DIP **Feeder** Capacity Notice – (Continued)
    - Transformer upgrades will not provide any additional capacity
    - Study new **dedicated feeder** option to allow interconnection capacity
    - Requires Distribution, Substation, Transmission, and MISO studies
    - We are still working with MISO to determine exactly what this will look like
    - Dedicated feeder may be considered Transmission; if so, the DER might not be eligible participate in S*RC Program
    - May require PUC ruling

Non-Disclosure Agreements

Non-Disclosure Agreements, or NDAs, are utilized by Xcel Energy in order to release certain Trade Secret Material specific to engineering studies performed for Solar*Rewards Community developers.

- Who: The Trade Secret Material released pursuant the NDA is available only to individuals who execute the Exhibit A within the NDA. For each NDA request, please complete one NDA agreement per SRC application, and attach within the PDF one Exhibit A per individual, including consultants.
- What: The Trade Secret Material released is available only under an NDA. Even with the NDA in place certain other information will still not be provided including Security Information and information that is third-party nonpublic information.

Non-Disclosure Agreements Continued

- Where: Outside of a pre-application report, all Trade Secret Material requests as applicable to the NDA are sent to the requestor via an encrypted email. You will need to create and utilize a login within the encryption system to view.
- When: One year from the Effective Date of the NDA, the Trade Secret Material shall be destroyed by Requesting Party (and all parties who signed the Exhibit A to the NDA), including any and all electronic copies. Requesting Party shall certify and confirm in writing that all such Trade Secret Material has been destroyed.
- Why? Non-compliance with the NDA can result in the limitation of future such requests or more restrictive provisions to better assure protection of the material subject to the NDA.

No Upgrades Required – Previous Threshold

- IA lists 1MW and required upgrades to accommodate
- IA also lists the amount of MW available, without upgrades

- If no upgrade option is **<10%** of requested capacity, Xcel does not fully scope and call out that option:
  - Ex. 1 MW project, ~75 kW is available without upgrades
  - Xcel states: “less than 10% of the requested capacity is available without upgrades” **rather than spend additional time analyzing to find exact value**

No Upgrades Required – Current Threshold

- Past discussion on threshold where projects not viable
  - Xcel used 10% of requested capacity
  - Discussion up to 50% of requested capacity
- MNSEIA discussed with membership
  - 30% of requested capacity = agreed upon limit
  - Going forward, Xcel will limit analysis done where “no upgrades required” </= 30% of requested capacity


Xcel Energy®