North Dakota Transmission Authority

North Dakota Industrial Commission

BIL 40101(d) Application

Project Title: Sectionalizing and Protective Devices

Applicant: Mor-Gran-Sou Electric Cooperative

Date of Application: 11/20/2023

Amount of Grant Request:
$455,000

Total Amount of Proposed Project:

$650,000

Duration of Project:

3 years including waiting for devices

Point of Contact (POC):

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Applicant Description

Provide a description of the applicant (i.e., type of entity, corporate structure, MWh sold annually, etc.).

Project Description

Provide a description of the project with enough detail to allow the reviewers to adequately evaluate the project.

Standards of Success

Provide a description of how the proposed project will fulfill any or all of the program objectives.

Project Timeline

Provide a project timeline including anticipated start date, significant project milestones, and anticipated project completion date or project duration.

Project Budget

Provide a total project budget, clearly describing the amount of funding requested from NDTA.

Applicant Description

Mor-Gran-Sou Electric Cooperative, Inc. provides electricity to rural members in Grant, Sioux, and Morton Counties in south-central North Dakota. Mor-Gran-Sou Electric Cooperative (MGS) provides power to the Standing Rock Sioux Indian Reservation in Sioux County ND. MGS has an office in Mandan, North Dakota along with an office in Flasher, North Dakota and Ft. Yates, North Dakota. MGS's service territory is approximately 4,800 square miles and serves roughly 10,226 meters. The Cooperative owns 243 miles of transmission lines, 2,591 miles of overhead distribution line, 861 miles of underground distribution, and 20 distribution substations. The Cooperative sells less than 200,000 MWhs per year.

Project Description

MGS plans to replace 9 old hydraulic reclosers with 9 new Cooper Nova T/S in 3 distribution substations. The Cooperative also plans to replace old hydraulic reclosers on distribution lines out of these substations with the newer technology of the TripSavers. MGS will install 40 new S&C TripSavers as part of this project.

Standards of Success

Replacing old devices with Cooper Novas and TripSavers will allow for better coordination between devices, therefore reducing frequency of outages as well as reducing the amount of members without power during an outage. As MGS moves towards implementing a new SCADA program, the new Cooper Novas will allow for remote operation therefore reducing outage duration. In addition, the loading information provided by the Cooper controllers will allow MGS to monitor loading and operate the system more efficiently to allow for increased loading due to EVs as well as possible two-way power flow due to increases in solar generation and other distributed generation.

This project is expected to positively impact 932 meters across KEM's service area in the form of fewer outages and shorter outage durations. KEM has begun replacing older sectionalizing devices with TripSavers over the past 3 years. This will be a continuation to allow more members to be positively impacted at a faster rate. KEM has plans in their most recent Construction Work Plan to begin to replace older substation devices with Cooper Novas to allow for future SCADA plans as well as to reduce maintenance dollars spent on old devices. All of the improvements will take place either within existing substation yards or at existing pole locations. No new ground is expected to be disturbed for any of this project.

It is estimated that MGS will utilize 3 contract individuals (temporary) to install the Cooper Novas, 3 engineers (temporary) to plan for and program the devices. The contractors and engineers will be needed for maintenance and troubleshooting for the life of the devices but are not expected to be retained full-time.

Project Timeline

MGS plans to order the Cooper Novas and TripSavers after grant approval and will replace the substation devices with the 9 Cooper Novas within 12 months of receiving the devices. The Cooperative will replace old line reclosers with TripSavers within 24 months of receiving the devices. It is expected there will be a roughly 12 month lead time on both the Novas and TripSavers.

Project Budget

The total project cost is estimated to be $650,000. That total is made up of $450,000 to replace substation devices with 9 Cooper Novas and $200,000 to replace distribution line devices with 40 S&C TripSavers. This includes cooperative or contract labor to install new devices and retire existing devices. It also includes engineering services to plan for optimal device placement, device settings, and programming of the new protective devices.