North Dakota Transmission Authority

North Dakota Industrial Commission

BIL 40101(d) Application

Project Title: NPEC_01 Electronic SCADA Recloser Installation

Applicant: Northern Plains Electric Cooperative

Date of Application: 11/20/2023

Amount of Grant Request: $586,000

Total Amount of Proposed Project: $879,000

Duration of Project: 10 Months

Point of Contact (POC): Ashten Dewald, Engineering Manager

POC Telephone: 701-652-3156

POC Email: ashtend@nplains.com

POC Address:

PO Box 180

Carrington, ND 58421

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Applicant Description

Northern Plains Electric Cooperative is a member-owned electrical distribution cooperative that provides service to over 11,900 locations. Northern Plains' service territory is one of the largest in North Dakota, encompassing 11 counties and two reservations in a 50 to 70-mile-wide area from south of Jamestown to the Canadian border. The Cooperative has 42 employees and is managed through a nine-member board of directors. Offices are located in Cando and Carrington as well as 6 outposts across the service territory.

Northern Plains' membership consists of residential homes, farms, critical care facilities, schools, irrigation, commercial and industrial loads. The Cooperative owns and operatives 6,666 miles of distribution (3,807 miles overhead and 2,859 miles underground) and has annual sales of approximately 430,000 MWh.

Project Description

Northern Plains is proposing implementing adaptive protection technologies with the installation of 19 sets of remote operated SCADA ready electronic reclosers and panels in existing distribution substations. These reclosers will allow dispatchers to remotely control and isolate faults prior to the crews being on scene. This also allow remote access to fault current and locating of line faults to improve the response time to outages. This project will upgrade 6 substations that will benefit approximately 2,440 member meters in Towner, Rolette, Benson, Pierce, Ramsey, Wells, and Eddy Counties.

The distribution substations that are identified for the installation of the SCADA ready reclosers are provided in the Table 1. The table identifies the substation, feeders and customers served. A map of the substation locations is provided in Attachment 1.

Distribution Substation	Number of Feeders	Number of Recloser Sets	Customers	Counties Impacted
Rolla	3	3	309	Towner/Rolette
Rocklake	2	2	187	Towner
Cando	4	4	838	Towner
Esmond	3	3	170	Benson/Pierce
Fort Totten	3	3	571	Benson
New Rockford	4	4	368	Eddy/Wells
	19	19	2443	

Table 1: SCADA Recloser Installation Locations

Product Information and Build America / Buy America

The NOVA Triple Single (TS) recloser system and Form 6 are developed and sold by Eaton. The product is considered a commercial-off-the-shelf and is available to utilities throughout the United States. A brief product overview is provided as Attachment 2.

Components of the recloser and panel are sourced by qualified/designated global partners with the complete unit being designed and manufactured in the United States. Upon review of the product and associated items, a waiver for Buy America may be required due to not meeting the requirement of the total cost of all U.S. made components being greater than 55 percent. A waiver would be pursued if this application were to be approved.

Facilities / Equipment / Job Creation

Installation of the SCADA ready electronic reclosers and panels is work that has been performed by Northern Plains' journeyman lineman on multiple occasions at other distribution substations. The resources required entail 4 journeyman lineman for installation of reclosers, panel and associated wiring/terminating. An engineer is required to establish the overall technical plan, program the panel for protection schemes, install communication hardware and perform SCADA integration. Equipment required by the line crews are standard bucket trucks and lifts that the Cooperative currently owns as part of its fleet.

As this project is feasible within the current workforce of the Cooperative, a temporary hire of 1 (one) apprentice journeyman will be pursued to assist in the installations. Temporary hire consists of no more than 1,000 hours.

Davis Bacon Act Requirements

Northern Plains' employees are paid wages equivalent to prevailing wages as similar electric distribution cooperatives throughout North Dakota. The journeyman lineman employed with the Cooperative are part of the International Brotherhood of Electrical Workers (IBEW) and have an existing 4-year union contract that identifies wages that are in comparison of other North Dakota electric cooperative IBEW union contracts. Northern Plains will ensure that all contractors who intend to bid on the proposed work will ensure they will meet prevailing wage requirements. Each contractor will need to provide registration with the Sectraty of State and the Labor and Human Rights Office.

Proposed Cost Match

Northern Plains is proposing to cost-share 1/3 of the award value. The Cooperative sells less than 4 million MWh annually. Full project budget is provided in the "Project Budget" section.

Expertise

Northern Plains Electric Cooperative has highly trained personnel and qualified operators on staff who are capable and well experienced in the project as defined. The Cooperative has executed Construction Work Plans with over $27 million of identified projects. In addition, the Cooperative has successfully completed Hazard Mitigation Grants (HMGs) in coordination with FEMA as the grant administrators.

Ashten Dewald, P.E. is the principal contact for this grant and she is a professional engineer with 10 years of electric distribution experience. Ashten is the current Engineering Manager for Northern Plains. Ashten's resume is provided in Attachment 3.

Environmental Impacts

All work associated with this project DOES NOT involve new any new building construction or site excavations/groundbreaking activities. The project involves routine work within an existing electric distribution substation on existing structures. Work will not require any construction and will not affect any land areas, bodies of water or critical habitats. No socio-economic or historical/cultural resources will be impacted. No environmental impacts with this project.

Standards of Success

The response times are delayed due to the reclosers having to be manually operated by qualified personnel. SCADA enabled distribution equipment can shorten outages and create automated resiliency while providing real-time equipment information without having to dispatch field crews.

Objective 1: *Reduce the magnitude and duration of grid outages caused by major disruptive storm and non-storm events.*

SCADA enabled electronic reclosers and panels installed within a distribution substation will aid in reducing outage restoration times as it will allow dispatchers and operations personnel to remotely monitor, control and aid in isolating permanent faults that may occur on overhead or underground distribution. The fault current data that can be retrieved from the electronic recloser can be used to determine the fault location and accelerate the restoration time dramatically.

- Existing procedures for a line crew to respond to an outage is to place a lineman at the substation to operative the hydraulic recloser while other linemen will either visually patrol the distribution if it is an overhead line or sectionalize a portion of underground and attempt to operate the recloser to determine the fault location and isolate. Remotely operating a recloser and receiving fault data will eliminate the need for a lineman to travel to the substation and provide a more precise fault location, eliminating the time required to patrol a line or isolate sections of underground. It is expected to reduce the fault locating and isolation time from an average of 3 hours to an average of 45 minutes, aiding in minimizing the impact to only the faulted portion of the line. Repair time of the actual fault will stay the same as there is no change in the repair work required.

- If a distribution substation's transmission source is lost due to weather or a transmission fault, the electronic reclosers may be utilized to switch load from one substation to a neighboring substation via distribution. Normal procedures would require sending a line crew to each distribution substation to manually open and close breakers to move load, where with electronic reclosers this can be done in a matter of minutes remotely from dispatch. It is expected to reduce the time to switch out a substation from an average of 2 hours to average of 15 minutes.

- Three operations/dispatch personnel would be trained in safely remote operating and retrieving data from the electronic reclosers. All journeyman lineman (22) would be trained in order to understand the safe work practices needed when a recloser may be operated remotely.

Objective 2: *Reduce the frequency and impacts of grid outages caused by major disruptive storms and non-storm events.*

SCADA enabled electronic reclosers and panels may not directly reduce the frequency of grid outages from storm and non-storm events or improve the physical durability of the grid, but they can significantly reduce the amount of time a customer is impacted from an event. The qualitative assessment and restoration times are both improved.

- As mentioned in Objective 1, both the capability of remotely determining the location of a fault and having the capability to remotely switch customers from one distribution substation to an adjacent substation accelerates outage restoration and improves operational flexibility. It is expected that customer outages would be reduced from an average of 3 hours utilizing conventional practices to less than 1 hour.

Objective 3: *Implement grid modernization projects to develop energy solutions that provide lower-cost energy access to disadvantaged or underserved communities.*

- This project application does not involve the development of renewable energy or distributed energy resources. Although, the reduction in restoration and response times will overall improve efficiency and savings, in turn helping keep the Cooperative's controllable costs down and electric rates stable.

Project Timeline

This project would be able to proceed immediately if it was to be approved. The longest lead item would be procuring the electronic reclosers and panels. The timeline provided below is based off current lead times provided by the manufacturer and Northern Plains' past experience with substation recloser installations.

- January 2024 — Order NOVA-TS Electronic Recloser / Form 6 Panels (35 week lead-time) and establish installation plans
- September 2024 — Install reclosers and panels in the substations
- December 2024 — Install communication equipment, program recloser panels, test and verify SCADA connection and functionality
- December 2024 — Project close-out and completion

Project Budget

This project primary cost is the procurement of the SCADA electronic reclosers and panels. The total estimated project budget is $751,700 and Northern Plains is proposing a 1/3 cost share of total award or $293,000 and requested grant funds of $586,000.

- Material costs:

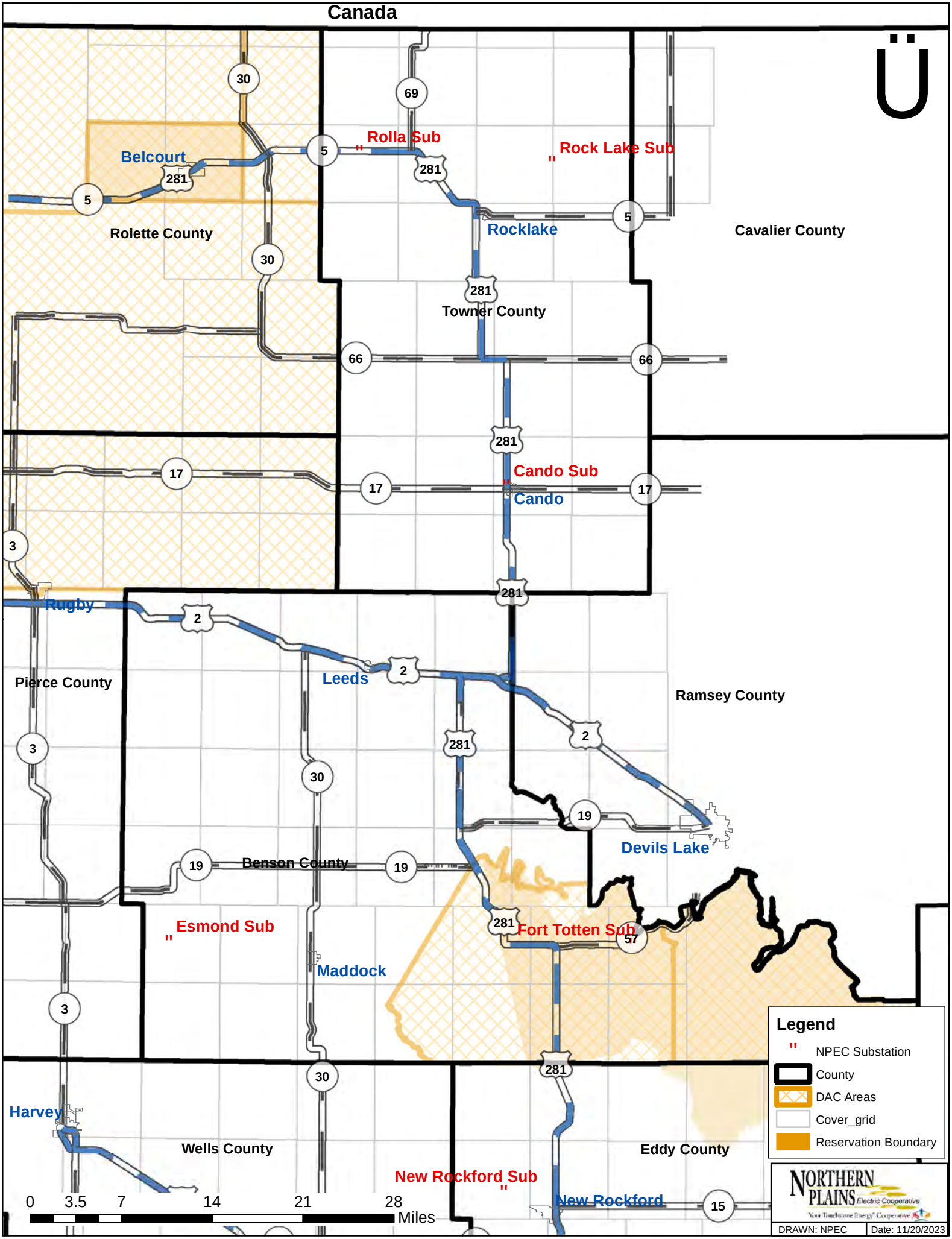
  $36,000/recloser set x 19 units = $684,000 – per latest bid from vendor

  Jumper Wire and Terminations x 19 installs = $28,500 – based on historical installs

- Install Labor Costs: $8,500/set x 19 units = $161,500 – based on historical installations
- Admin/Engineering: $5,000 – based on historical installations

Total Budget = $879,000

Attachment 1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NPEC Substation
County
DAC Areas
Cover_grid
Reservation Boundary
NORTHERN PLAINS Electric Cooperative
DRAWN: NPEC
Date: 11/20/2023

Attachment 2

NOVA-TS
Triple-Single Recloser System

COOPER POWER SERIES

Coordinated, dependable and precise automation

Standardize on the triple-single recloser that provides real benefits and real value. Eaton's Cooper Power series NOVA™-TS triple-single recloser system allows multi-mode configuration for coordinated, dependable and precise automation.

Application versatility, automatic overcurrent protection

The NOVA-TS triple-single recloser system is comprised of the following:

- Three single-phase NOVA-TS reclosers, each with:
  - Manual trip lever
  - Mechanical contact position indicator
- Form 6-TS recloser control
- One compatible, common junction box, which includes:
  - Three interconnecting cables (user-specified length)
  - One receptacle to provide easy access to the Form 6-TS control cable
- Control cable (user-specified length)

The NOVA-TS recloser has three modes of operation:

- **Three-phase trip, three-phase lockout (MODE A)** All three phases simultaneously trip on an overcurrent, reclose and sequence together.
- **Single-phase trip, three-phase lockout (MODE B)** Each individual phase will sense line current and only the phase corresponding to the faulted phase will trip. If any one phase sequences to lockout, the other two phases also lock out, eliminating permanent single-phasing of three-phase loads.
- **Single-phase trip, single-phase lockout (MODE C)** Each individual phase trips and sequences to lockout independently of each other. This is primarily for residential loads and/or where single-phasing of three-phase loads is protected by other means.

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Form 6-TS control operation

One Form 6-TS control for three reclosers, easily configured using ProView™ interface software provides:

- Flexible coordination
- Advanced event recorder/data profiler analysis tools
- Voltage, current and harmonic metering

Additionally, the front panel allows the user to manually open and close any phase independently without menu navigation.

Proven reliability

- Automation to improve substation performance
- Light-weight design well-suited for retrofit or new applications

Enhanced protection with dynamic phase tripping

A configurable option for MODE C operation is available to trip and lockout all three phases in the event of a phase-to-phase or three-phase fault. Normal operations occur per the programmed sequence for a single phase-to-ground fault; however, if a phase-to-phase fault occurs, the control will trip and lock out all three reclosers when any one phase sequences to lockout. This avoids any multiphase energization from one phase.

Internal voltage sensing

Using a high-voltage resistor within each interrupter module with source-side connections, the sensing option and control support a magnitude accuracy of 2% or better and a phase degree accuracy of ±1.5°.

Modernize substation applications

- Cost-effective solution for your protection, metering and communication applications
- Automation features of the Form 6-TS control will improve your substation performance
- Add the remote operation, status and analog metering functions to your automation system through standard industry protocols for real-time system analysis and optimization
- Light weight of recloser system may allow for retrofit of existing structure without the expense of foundations or other structural changes

Effective NOVA-TS recloser application

Multiple fault scenarios were analyzed to provide proper system coordination for both phase and ground faults.

- Phase-to-ground, phase-to-phase and three-phase faults, along with multiple faults on different phases, were studied to verify the correct sequencing of each recloser with proper time-current curves
  - Load-side fuse protection is maintained even if two faults occur on different phases prior to resetting the control
- Should problems occur, utility operators would discover great benefits in repairs made on an individual phase basis
- Replacement of individual phase devices brings lower inventory economics and shorter system restoration and bypass intervals

For Eaton's Cooper Power series Switchgear Support Group, call 1-800-497-5953 or visit: **Eaton.com/cooperpowerseries**

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Waukesha, WI 53188
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August 2019

Powering Business Worldwide

Maximum functionality and ultimate user configurability

The ultimate choice for distribution protection—with the powerful Form 6 control, one platform provides uniform design, programming and training.

Distribution protection

Eaton's Cooper Power™ series Form 6 control is designed to be a flexible, easy-to-use control that has been built to the specifications of utility crews, service technicians and field operators. It provides important service restoration operations, with instant access to operating functions to quickly determine the status of a device, locate faulted phases, check counters, and find other critical information.

Form 6 control is ideal for a variety of substation applications including:

- Main feeder protection
- Industrial service entrance
- Cogeneration inter-tie
- Automation via PeerComm™ communication protocol
- Distribution automation via integration with Cooper Power Series Substation Modernization Platform™ (SMP) line of products
- Portable substation

The versatile Form 6 control can be used in the following line applications:

- Main line sectionalizing
- Automatic reconfiguration
  - PeerComm communication protocol automation
  - Loop sectionalizing
- Sectionalizing laterals
- Power quality monitoring

Form 6 control is available in various mounting configurations including:

- Pole mount
- Yard mount
- Rack mount
  - Single
  - Single loop scheme
- Pole-mount loop scheme

Form 6 control can be used with the following protection equipment:

- Reclosers
  - NOVA™
  - NOVA triple-single
  - RXE
  - RVE
  - WE
  - WVE
  - VWE
  - VWVE
  - VSA
  - VSO
  - PWE
  - PWVE
- Pad-mounted switchgear (custom applications)
- Breakers (with 5A input or 1 A CT inputs)

Powering Business Worldwide

Take control of power quality with Eaton's knowledge-based data analysis tools—designed to improve power quality

Use one control for multiple applications: ProView™ software supports maximum flexibility and the highest performance standards.

Easy to use: Complex control schemes are easy with the Idea Workbench™ feature and detailed help files.

Test your protection logic: Simulate different fault events to test virtual responses prior to field exposure with the Virtual Test Set™ feature.

- **Oscillography**
  Simultaneously monitors the integrated performance of a recloser and the control, showing user-defined cycles before and after a trigger point
- **Oscillography replay**
  Previews how the control will behave for the same fault with altered settings to reduce future fault occurrences
- **Data profiler**
  Can be customized for sample rate and metering forms like weekly load profiles, daily harmonic disturbances or hourly voltage fluctuations
- **Sequence of events log**
  Provides detailed reporting of system operations, including current and voltage values for a minimum of 90 events. The last five events are conveniently displayed in the front panel LCD for easy access
- **Duty cycle monitor**
  Measures and records duty for each phase to accurately predict contact life of recloser interrupters and can be adjusted or reset if recloser is changed or serviced
- **Application diagram**
  Saves troubleshooting costs by allowing you to quickly view your system in one window where active logic elements of the control and distribution system are displayed
- **Comprehensive metering**
  Reduces operating costs by providing accurate load current measurements to balance feeders, improves system planning with real-time data reports, and increases efficiency through quick fault location and identification

For Eaton's Cooper Power series product information, visit **www.eaton.com/cooperpowerseries**

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May 2017

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Powering Business Worldwide

Understanding common domestic preference requirements

Impact of domestic preference requirements on government projects

"Domestic preference" refers to requirements imposed upon contractors and their suppliers concerning the origin and composition of the products or materials that will be utilized in the construction or completion of these projects. Having a general understanding of these requirements is useful because it impacts customer base and sales.

U.S. Federal Government agencies, and some state and local government agencies, must comply with domestic sourcing laws when acquiring supplies, services or construction materials. For federal agencies, there are four primary domestic sourcing laws: **Buy America Act** ("Buy America"), **Buy American Act** ("BAA"), **Build America Buy America,** and **Trade Agreements Act** ("TAA"). The applicable rules and regulations for a specific situation can be determined by understanding the funding source, the amount of the procurement, and the specific agency's controlling regulations. The following provides a general overview of these provisions.

Buy American Act (BAA)

The Buy American Act (BAA) creates a national purchasing preference for federal government agencies to buy domestic end products when it purchases supplies and construction materials. The Buy American Act uses a two-part test to determine if an end product is domestic: (1) the article must be manufactured in the United States; and (2) the cost of the domestic components must exceed 60% of the costs of all of the components. Over the next several years the percentage will increase to 65% effective in calendar year 2024 and 75% effective in calendar year 2029. The relevant threshold is determined by the year that the goods are sold in, not the year that the contract was originally executed. A price premium of 20% or 30% (depending on the size of the business) will be added for pricing evaluation by the contracting officer (making it less competitive) when the domestic requirement is not satisfied.

The components test prong does not apply to commercial off the shelf (COTS) items, unless the COTS items consist wholly or predominately of iron or steel. A COTS item is a product that is customarily used by the public for non-government purposes, is sold in substantial quantities in the commercial marketplace, and is offered to the government without modification. However, for COTS items or any products that consist wholly or predominately of steel or a combination of both, the cost of foreign iron or steel must be less than 5% of the cost of all the components of the end product in order to be considered domestic.

The BAA has multiple exclusions and waiver processes available that allow for the purchase of foreign end products. The most prevalent is the public interest waiver. Under the public interest waiver, the head of an agency may waive application of the Buy American Act if it determines the domestic preference is inconsistent with the public interest and it has an agreement with a foreign government that provides a blanket exception to the statute. The Department of Defense has used the public interest waiver to waive application of the Buy American Act to twenty-six countries, including Canada, Japan, the United Kingdom, and Germany.

The Federal Aviation Administration (FAA) Buy American provisions require that all steel and manufactured goods used in Airport Improvement Program (AIP) funded projects be produced in the United States. In addition to being produced in the United States, recipients must certify that the product is comprised of 100% U.S. materials.

Buy America

Buy America is applicable to state and local government projects typically when these projects are funded by the Federal Transit Administration (FTA). For a manufactured product to be compliant with FTA Buy America, all of the product's manufacturing processes must take place in the U.S. and 100% of the components of supplies or construction materials must be made in the U.S. A component is considered of U.S. origin if it is manufactured in the United States, regardless of the origin of its subcomponents. A cost-based waiver is applicable if the cost of domestic materials is 25% more expensive than foreign materials. A price premium of 25% will be added for pricing evaluation by the contracting officer if the domestic requirement is not satisfied.

The Federal Transit Administration, Amtrak, Federal Highway Administration, Federal Railroad Administration, Buy America Build America, Infrastructure Investment and Jobs Act, and the Environmental Protection Agency all have their own respective Buy America regulations that differ slightly in content and application.

Build America, Buy America

The Build America, Buy America Act, applies a domestic content procurement preference requirement to Federally funded public "infrastructure projects" after May 14, 2022. The domestic content procurement preference requires that all iron, steel, manufactured products, and construction materials used in covered infrastructure projects are produced in the United States. In addition to the product being produced in the United States, the cost percentage of the domestic content of the product must be greater than 55% of the total cost of the product.

Trade Agreements Act (TAA)

The TAA waives application of the BAA based on the overall country of origin of the components. In order to achieve TAA compliance, the components must be "wholly" sourced from the US or a designated country. A product can be compliant with the TAA even if 100% of its components are foreign components, as long as the components are substantially transformed in the U.S. or a designated country (those that have trade agreements with the U.S. that require their goods to be treated the same as U.S. domestic products). The TAA's substantial transformation requirement is different from the BAA's manufacturing requirement. A product is "substantially transformed" when a fundamental change in its form, nature or character occurs- when it has been transformed into a new and different article of commerce with a name, character, or use distinct from that of the article or articles from which it was transformed. There are also dollar thresholds applicable to TAA compliance (i.e. the dollar value of the acquisition determines which of the trade agreements applies).

Compliance Actions

With the government funding of federal and state projects, reporting obligations may be imposed concerning the domestic content of the products supplied to Eaton's customers for covered projects. Contractors (prime or sub-contractors) may be required to 'certify' that the products they are purchasing or utilizing for covered projects comply with the various domestic preference regulations. Also, Eaton's customers may request or require Eaton to 'certify' or verify that products we supply are compliant. Should you have any questions regarding the compliance status of Eaton's products, do not hesitate to reach out to your local Eaton sales representative for more information.

For additional information, visit **Eaton.com/BuyAmerica**

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April 2023

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STRONGER FUTURE

Attachment 3

Resumes

Confidentiality Statement: *Pages [1&2] of this document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure. Anything marked in brackets [ ] shall be deemed confidential.*

1. Contact Information

[Ashten Dewald, PE 40209]
Engineering Manager
Northern Plains Electric Cooperative
PO Box 180 Carrington, ND 58421
[1 (701) 652-1852]
[ashtend@nplains.com]

2. Education

1. [Sargent Central Public Highschool]
    a. Graduated May 2007
2. South Dakota School of Mines and Technology
    a. Aug 2007 – Dec 2011
    b. Bachelors of Science in Electrical Engineering

3. Training

North Dakota Professional Engineer

4. Professional Experience

- Engineering Manager Feb 2022-Present
  [Northern Plains Electric Cooperative in Carrington, ND]
  Oversee the day-to day activities of the engineering department. Work with the engineering department to develop work plans and implement design infrastructure in accordance with current specifications.

- Engineering & Operations Manager Jan 2019 - Feb 2022
  [Northern Plains Electric Cooperative in Carrington, ND]
  Oversee the day-to day activities of the engineering and operations department. Work with the engineering department to develop work plans and implement design infrastructure in accordance with current specifications. Work with the operations and line personnel to implement the designs and build distribution facilities in a safe and efficient manner.

- System Engineer Dec 2013 – Jan 2019
  [Northern Plains Electric Cooperative in Carrington, ND]

Responsible for the design, coordination, overcurrent protection, voltage regulation, load balancing, planning, and troubleshooting of the Cooperative's electric power distribution system.

- Electrical Engineer Jan 2012-Dec 2013
  [John Deere Power Electronic Solutions in Fargo, ND]
  Test verification and design to verify conformance to SAE standards on power electronics circuitry and equipment along with monitoring and analysis on prototypes.

- Student Sept 2007 – Dec 2011
  [South Dakota School of Mines and Technology]
  Rapid City, SD

- Electrical Engineer Intern May 2011-Aug 2011
  [John Deere Electronic Solutions in Fargo, ND]
  Test monitoring and verification for conformance to SAE standards on power electronics circuitry and equipment.

- Electrical Engineer Intern May 2010-Aug 2010
  [John Deere in Waterloo, IA]
  Test and user Interface creation in LabVIEW to coordinate with equipment in the lab to perform testing on smaller electronics.

5. Appointments

I do not have any Appointments

North Dakota Transmission Authority

North Dakota Industrial Commission

BIL 40101(d) Application

Project Title: NPEC_02 Pole Changeouts

Applicant: Northern Plains Electric Cooperative

Date of Application: 11/20/2023

Amount of Grant Request: $810,667

Total Amount of Proposed Project: $1,216,000

Duration of Project: 11 Months

Point of Contact (POC): Ashten Dewald, Engineering Manager

POC Telephone: 701-652-3156

POC Email: ashtend@nplains.com

POC Address:

PO Box 180

Carrington, ND 58421

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Northern Plains' membership consists of residential homes, farms, critical care facilities, schools, irrigation, commercial and industrial loads. The Cooperative owns and operatives 6,666 miles of distribution (3,807 miles overhead and 2,859 miles underground) and has annual sales of approximately 430,000 MWh.

Project Description

This project is the mass changeout of 700 of our end-of-life poles that were deemed un-fit to stay in service for long term use due to standard pole inspection. These poles are located in Stutsman, Foster, Wells, Benson, and Pierce Counties and will improve the resilience against wind and ice and can greatly improve the reliability of the surrounding system. The bulk of the Northern Plains overhead system was installed between 1949 and 1952. A vast majority of these poles are still in service today. The testing of these poles can determine the weak areas of the line and by strategically removing the weaker poles and adding strong healthy poles in their place, increase the strength of the entire line. An overview of the pole locations is provided in Attachment 1.

Product Information and Build America / Buy America

The primary product utilized in this project are 35-4 distribution poles. The 35-4 class of poles is the standard product for installation as identified in our construction work plan. The Cooperative procures these poles from the Stella-Jones Corporation and they are produced and manufactured in the U.S. The hardware that is installed on the pole replacement such as the pole top pin and offset neutral are also manufactured in the U.S. All products meet the Buy America requirements.

Facilities / Equipment / Job Creation

Installation of the distribution poles is work that has been performed by Northern Plains' journeyman lineman on a regular basis as this standard practice for owning and maintaining distribution system. The resources required entail 3-4 journeyman lineman for installation of pole and removing the old pole. An engineer is required to establish the overall pole

replacement work orders and staking. Equipment required by the line crews are standard bucket trucks, digger derricks and/or bobcats with pole attachments. The Cooperative currently owns all the necessary equipment and fleet.

As this project is feasible within the current workforce of the Cooperative, it has been proven to be more cost effective to hire out the pole replacements to a contractor. This project will entail hiring a contractor consisting of 3-4 journeyman and will last for the entire term of the project.

Davis Bacon Act Requirements

Northern Plains' employees are paid wages equivalent to prevailing wages as similar electric distribution cooperatives throughout North Dakota. The journeyman lineman employed with the Cooperative are part of the International Brotherhood of Electrical Workers (IBEW) and have an existing 4-year union contract that identifies wages that are in comparison of other North Dakota electric cooperative IBEW union contracts. Northern Plains will ensure that all contractors who intend to bid on the proposed work will ensure they will meet prevailing wage requirements. Each contractor will need to provide registration with the Sectraty of State and the Labor and Human Rights Office.

Proposed Cost Match

Northern Plains is proposing to cost-share 1/3 of the award value. The Cooperative sells less than 4 million MWh annually. Full project budget is provided in the "Project Budget" section.

Expertise

Northern Plains Electric Cooperative has highly trained personnel and qualified operators on staff who are capable and well experienced in the project as defined. The Cooperative has executed Construction Work Plans with over $27 million of identified projects. In addition, the Cooperative has successfully completed Hazard Mitigation Grants (HMGs) in coordination with FEMA as the grant administrators.

Ashten Dewald, P.E. is the principal contact for this grant and she is a professional engineer with 10 years of electric distribution experience. Ashten is the current Engineering Manager for Northern Plains. Ashten's resume is provided in Attachment 2.

Environmental Impacts

The project involves routine work within the existing right-of-way and replacement of the poles will take place in the exact location of the retired pole. Work will not require any new construction and will not affect any land areas, bodies of water or critical habitats. No socio-

economic or historical/cultural resources will be impacted. This type of project is coded as categorical excluded in our standard construction work plans with RUS.

Standards of Success

This project will help reduce the magnitude and duration of grid outages caused by major disruptive storm and non-storm events. Adding a healthy pole where there was previously a weak pole will prevent the cascading pole toppling effect and shorten outage times due to weather events. Having a strong pole system is critical in reducing outage times in areas where undergrounding is not practical. The time to restoration is generally shortened due to only needing to replace small line items instead of entire poles which require specialty equipment for installation.

Objective 1: *Reduce the magnitude and duration of grid outages caused by major disruptive storm and non-storm events.*

A more robust pole that has not been in place for more than 70 years will be able to withstand the effects of weather events such as high winds. The pole will be stouter and can hold up during ice loading on the overhead lines. It is preferred to have the wire or line material to fail rather than the actual pole. Restoration is accelerated if only the wire is needed to be repaired rather than removing a broken pole and installing a new pole.

- It is expected to reduce the magnitude and duration of an average outage due to a weather event in relation to a broken pole versus a broken wire by 2 hours down to 30 minutes. Impact to actual number of members is difficult to quantify since the area covered in this project is so widespread.

Objective 2: *Reduce the frequency and impacts of grid outages caused by major disruptive storms and non-storm events.*

The frequency of outages would be reduced as the infrastructure can handle more ice loading and high winds. Impacts of grid outages would also be reduced as the amount of broken poles would be reduced and the potential of a cascading pole failure would also be reduced.

- Similar to Objective 1, it is expected that customer outages would be reduced from an average of 2 hours down to less than 1 hour.

Objective 3: *Implement grid modernization projects to develop energy solutions that provide lower-cost energy access to disadvantaged or underserved communities.*

- This project application does not involve the development of renewable energy or distributed energy resources. Although, the reduction in restoration and response times will overall improve efficiency and savings, in turn helping keep the Cooperative's controllable costs down and electric rates stable.

Project Timeline

This project would be able to proceed immediately if it was to be approved. The first step would to procure the material for the project. The timeline provided below is based off current lead times provided by the manufacturer and Northern Plains' past experience with changing out poles. The start of contractor activities would be dependent on weather and road restrictions.

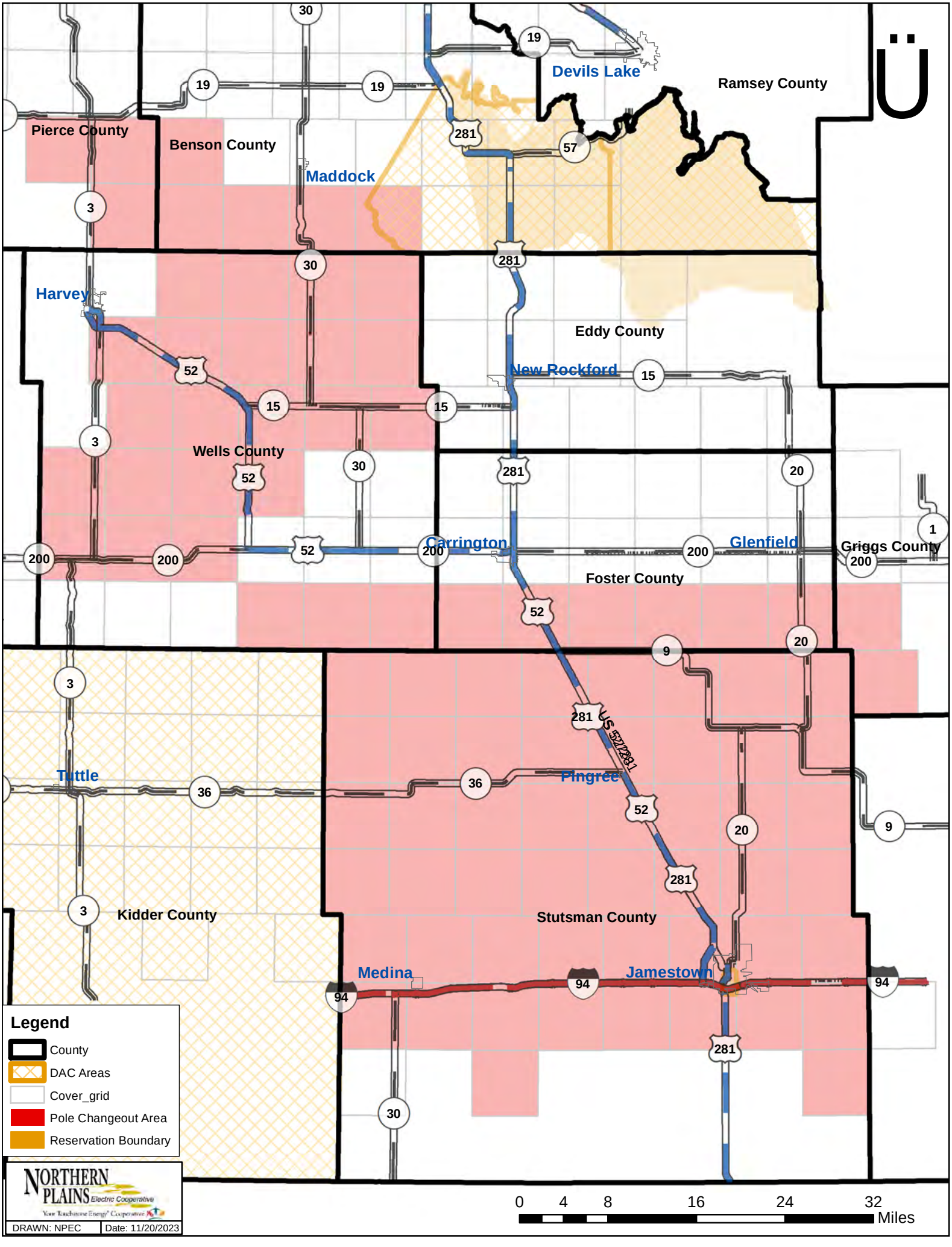
January 2024	Order Poles and Materials for changeouts
January – March 2024	Create Work Orders for Contractors, receive materials
March 2024	Weather and road restriction permitting, Contractor to start changing poles
March – October 2024	Contractor Change poles
November 2024	Project completion

Project Budget

Material costs:	
Poles = $392,000	Per most recent bids for poles
Framing Material = $84,000	Per most recent bids for material
Install Labor Costs: $735,000	Historical cost utilizing a contractor
Admin/Engineering: $5,000	

Total Budget = $1,216,000

Attachment 1


Devils Lake
Ramsey County
Pierce County
Benson County
Maddock
Harvey
Eddy County
New Rockford
Wells County
Carrington
Glenfield
Griggs County
Foster County
Tuttle
Pingree
Kidder County
Stutsman County
Medina
Jamestown
US 52/281
Legend
County
DAC Areas
Cover_grid
Pole Changeout Area
Reservation Boundary
NORTHERN PLAINS Electric Cooperative
Your Touchstone Energy® Cooperative
DRAWN: NPEC
Date: 11/20/2023
0 4 8 16 24 32
Miles

Attachment 2

Resumes

Confidentiality Statement: *Pages [1&2] of this document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure. Anything marked in brackets [ ] shall be deemed confidential.*

1. Contact Information

[Ashten Dewald, PE 40209]
Engineering Manager
Northern Plains Electric Cooperative
PO Box 180 Carrington, ND 58421
[1 (701) 652-1852]
[ashtend@nplains.com]

2. Education

1. [Sargent Central Public Highschool]
    a. Graduated May 2007
2. South Dakota School of Mines and Technology
    a. Aug 2007 – Dec 2011
    b. Bachelors of Science in Electrical Engineering

3. Training

North Dakota Professional Engineer

4. Professional Experience

- Engineering Manager Feb 2022-Present
  [Northern Plains Electric Cooperative in Carrington, ND]
  Oversee the day-to day activities of the engineering department. Work with the engineering department to develop work plans and implement design infrastructure in accordance with current specifications.

- Engineering & Operations Manager Jan 2019 - Feb 2022
  [Northern Plains Electric Cooperative in Carrington, ND]
  Oversee the day-to day activities of the engineering and operations department. Work with the engineering department to develop work plans and implement design infrastructure in accordance with current specifications. Work with the operations and line personnel to implement the designs and build distribution facilities in a safe and efficient manner.

- System Engineer Dec 2013 – Jan 2019
  [Northern Plains Electric Cooperative in Carrington, ND]

Responsible for the design, coordination, overcurrent protection, voltage regulation, load balancing, planning, and troubleshooting of the Cooperative's electric power distribution system.

- Electrical Engineer Jan 2012-Dec 2013
  [John Deere Power Electronic Solutions in Fargo, ND]
  Test verification and design to verify conformance to SAE standards on power electronics circuitry and equipment along with monitoring and analysis on prototypes.

- Student Sept 2007 – Dec 2011
  [South Dakota School of Mines and Technology]
  Rapid City, SD

- Electrical Engineer Intern May 2011-Aug 2011
  [John Deere Electronic Solutions in Fargo, ND]
  Test monitoring and verification for conformance to SAE standards on power electronics circuitry and equipment.

- Electrical Engineer Intern May 2010-Aug 2010
  [John Deere in Waterloo, IA]
  Test and user Interface creation in LabVIEW to coordinate with equipment in the lab to perform testing on smaller electronics.

5. Appointments

I do not have any Appointments

North Dakota Transmission Authority

North Dakota Industrial Commission

BIL 40101(d) Application

Project Title: NPEC_03 Overhead to Underground Conversions

Applicant: Northern Plains Electric Cooperative

Date of Application: 11/20/2023

Amount of Grant Request: $1,795,168

Total Amount of Proposed Project: $2,692,752

Duration of Project: 8 Months to 1.8 Years

Point of Contact (POC): Ashten Dewald, Engineering Manager

POC Telephone: 701-652-3156

POC Email: ashtend@nplains.com

POC Address:

PO Box 180

Carrington, ND 58421

TABLE OF CONTENTS

Please use this table to fill in the correct corresponding page number.

Applicant Description

Northern Plains Electric Cooperative is a member-owned electrical distribution cooperative that provides service to over 11,900 locations. Northern Plains' service territory is one of the largest in North Dakota, encompassing 11 counties and two reservations in a 50 to 70-mile-wide area from south of Jamestown to the Canadian border. The Cooperative has 42 employees and is managed through a nine-member board of directors. Offices are located in Cando and Carrington as well as 6 outposts across the service territory.

Northern Plains' membership consists of residential homes, farms, critical care facilities, schools, irrigation, commercial and industrial loads. The Cooperative owns and operatives 6,666 miles of distribution (3,807 miles overhead and 2,859 miles underground) and has annual sales of approximately 430,000 MWh.

Project Description

Description: Northern Plains Electric Cooperative has identified 5 overhead to underground conversion projects that can greatly improve the reliability of the system. These projects each benefit the respective service areas with mitigating weather-related outages and providing more reliable contingency feeds from adjacent substations. Undergrounding distribution eliminates impacts from high winds, lightning strikes, ice/frost, winter storms, public accidents and reduces maintenance costs. The majority of the projects identified are associated with 3-phase distribution lines as these are the main backbone of the electric system and provide the most benefit to the membership. Each project description and benefits are outlined in the following pages. A summary map of the project locations is provided in Attachment 1.

Product Information and Build America / Buy America

The projects identified within this application primarily utilize underground distribution cable that is either 4/0 AWG or 500 MCM. The Okonite Company is the manufacturer of the underground cable and they have provided a certification for compliance with the Buy America requirements.

The VISTA switchgear with motor operators utilized in the projects is manufactured by S&C Electric Company. S&C has provided an email stating the switchgear meet the requirements of for Buy America.

Termination elbows required to connections of the underground cable are manufactured in the U.S. per the specification sheet from ABB.

Copies of the specifications and certifications are provided in Attachment 2.

Facilities / Equipment / Job Creation

Installation of the underground distribution and retirement of overhead has been performed by Northern Plains' journeyman lineman on a regular basis as this is work performed on a daily basis. The Cooperative's journeyman lineman will be utilized for the termination, cutover and retirement of the overhead line. A contractor will be hired to install the underground cable, install necessary splices and set underground cabinets. An engineer is required to establish the overall technical plan, perform system studies, specifying materials, staking, easements and coordinating with necessary entities for permitting.

The equipment required by the line crews are standard, bucket trucks, digger derricks, mini-excavators that the Cooperative currently owns as part of its fleet. The contractor will utilize a static plow and a directional boring machine to install the underground cable.

As this project is feasible within the current workforce of the Cooperative, a temporary hire of at least 1 or 2 apprentice journeymen will be pursued to assist in the installations. Temporary hire consists of no more than 1,000 hours/year.

Davis Bacon Act Requirements

Northern Plains' employees are paid wages equivalent to prevailing wages as similar electric distribution cooperatives throughout North Dakota. The journeyman lineman employed with the Cooperative are part of the International Brotherhood of Electrical Workers (IBEW) and have an existing 4-year union contract that identifies wages that are in comparison of other North Dakota electric cooperative IBEW union contracts. Northern Plains will ensure that all contractors who intend to bid on the proposed work will ensure they will meet prevailing wage requirements. Each contractor will need to provide registration with the Sectraty of State and the Labor and Human Rights Office.

Proposed Cost Match

Northern Plains is proposing to cost-share 1/3 of the award value. The Cooperative sells less than 4 million MWh annually. Full project budget is provided in the "Project Budget" section.

Expertise

Northern Plains Electric Cooperative has highly trained personnel and qualified operators on staff who are capable and well experienced in the project as defined. The Cooperative has executed Construction Work Plans with over $27 million of identified projects. The Construction Work Plans focus primarily on converting overhead line to underground. Each project in a work plan must either have a full environmental if not categorical excluded. In addition to the work plan, the Cooperative has successfully completed Hazard Mitigation Grants (HMGs) in coordination with FEMA as the grant administrators.

Ashten Dewald, P.E. is the principal contact for this grant and she is a professional engineer with 10 years of electric distribution experience. Ashten is the current Engineering Manager for Northern Plains. Ashten's resume is provided in Attachment 3.

Environmental Impacts

The environmental impact is identified within the description of each conversion project.

Cost Benefit: There is a multi-factor benefit of undergrounding a line. The maintenance of the underground is significantly less than overhead. This saves maintenance costs on the line in the future. The overhead infrastructure that is currently serving Northern Plain membership is aging to its end of life. This will force the cooperative to either replace the line with overhead or bury it. The new technologies in medium voltage cable insulation are extending the life span of underground cable to a point where it is competing heavily with the overhead technologies. There is also a significant severe weather resistance to underground cable. All of these things together make underground a better long-term option than rebuilding to overhead.

Conversion Project 1:

Description: This shovel-ready project will convert the first 2 miles of 3 phase overhead distribution substation feeder to 500MCM underground distribution on the Turtle Mountain Reservation in Rolette County near Belcourt, ND to improve the reliability and regional resilience by mitigating overhead disruptions caused by weather and non-weather events. It will also improve the capacity to support growth and development in the region. A SCADA ready padmount VISTA switch with motor operators will be located at the substation site to provide quicker and safer power contingency restoration. This project takes place completely within the Turtle Mountain Reservation and will greatly benefit the members in the surrounding disadvantaged community.

Environmental: This project is a part of our existing construction work plan and was environmentally approved by RUS meaning this project was deemed NEPA Compliant. The Turtle Mountain Tribal Historic Preservation Office also has reviewed and approved this project. The environmental impacts will be minimal for this project. The project cable will be installed with use of a directional bore machine or static plow. This will provide minimal ground disturbance. A majority of the land use is tilled farm land and in our existing right of way. The overhead cable that is in this right of way has been in place since the early 1950s and has been maintained appropriately. The conversion of overhead to underground line also benefits the migratory birds by displacing overhead lines that can be hazardous to slow moving birds such as cranes and swans.

DAC's: The Disadvantaged Communities that will benefit from this project are: 38079941800, 38079951700, 38079951600, 38079951900.

Conversion Project 2:

Description: This shovel-ready project will convert 5 miles of 1 phase overhead distribution to 4/0 underground distribution on the Turtle Mountain Reservation to improve the reliability and regional resilience by mitigating overhead disruptions caused by weather and non-weather events. It will also improve the capacity to support growth and development in the region. This conversion will upgrade a single-phase stretch of overhead line to a three-phase underground line which not only helps with weather issues but with phase balancing and voltage support. This line will also tie two substation feeders together to provide firmer support in the event of an unplanned outage or for any planned maintenance activities. Two SCADA ready pad-mount switches will be located at either end of the project to provide quicker switching and contingency power restoration.

Environmental: This project is a part of our existing construction work plan and was environmentally approved by RUS meaning this project was deemed NEPA Compliant. The Turtle Mountain Tribal Historic Preservation Office also has reviewed and approved this project. The environmental impacts will be minimal for this project. The project cable will be installed with use of a directional bore machine or static plow. This will provide minimal ground disturbance. A majority of the land use is tilled farm land and in our existing right of way. The overhead cable that is in this right of way has been in place since the early 1950s and has been maintained appropriately. The conversion of overhead to underground line also benefits the migratory birds by displacing overhead lines that can be hazardous to slow moving birds such as cranes and swans.

DAC's: The Disadvantaged Communities that will benefit from this project are: 38079941800, 38079951700, 38079951600.

Conversion Project 3:

Description: This shovel-ready project will convert 9 miles of 3 phase overhead to 4/0 underground distribution rural Towner County near Rocklake, ND to improve the reliability and regional resilience by mitigating overhead disruptions caused by weather and non-weather events. This project starts at the Rocklake substation and stretches 4 miles south and 5 mile north of the substation. This 3-phase overhead line feeds the all the meters on the Rocklake substation. These lines also provide a contingency feed to the adjacent Rolla substation.

Environmental: This project is a part of our existing construction work plan and was environmentally approved by RUS meaning this project was deemed NEPA Compliant. The environmental impacts will be minimal for this project. The project cable will be installed with use of a directional bore machine or static plow. This will provide minimal ground disturbance. A majority of the land use is tilled farm land and in our existing right of way. The overhead cable that is in this right of way has been in place since the early 1950s and has been maintained appropriately. The conversion of overhead to underground line also benefits the migratory birds by displacing overhead lines that can be hazardous to slow moving birds such as cranes and swans.

DAC's: This project does not take place in a disadvantaged community.

Conversion Project 4:

Description: This project will convert 6 miles of 3 phase overhead distribution to 4/0 underground distribution rural eastern Rolette County to improve the reliability and regional resilience by mitigating overhead disruptions caused by weather events and non-weather events. This line is fed from the Rolla substation and provides 3-phase to multiple farm sites and a wind farm collection site and maintenance building located in northern Rolette County. This line also serves as a contingency feed for the rural area around St. John.

Environmental: This project will need to be environmentally cleared by the NEPA review process. The environmental impacts will be minimal for this project. The project cable will be installed with use of a directional bore machine or static plow. This will provide minimal ground disturbance. A majority of the land use is tilled farm land and in our existing right of way. The overhead cable that is in this right of way has been in place since the early 1950s and has been maintained appropriately. The conversion of overhead to undergound line also benefits the migratory birds by displacing overhead lines that can be hazardous to slow moving birds such as cranes and swans. As the NEPA review has not been completed, this project is very similar to the projects that have already received NEPA approval.

DAC's: The Disadvantaged Communities that will benefit from this project are: 38079951700, 38079951600.

Conversion Project 5:

Description: This project will convert 5 miles of 3 phase overhead distribution to 1/0 underground distribution rural Rolette County to improve the reliability and regional resilience by mitigating overhead disruptions caused by weather events and non-weather events. This

conversion will upgrade a single-phase stretch of overhead line to a three-phase underground line which not only helps with weather issues but with phase balancing and voltage support.

Environmental: This project will need to be environmentally cleared by the NEPA review process. The environmental impacts will be minimal for this project. The project cable will be installed with use of a directional bore machine or static plow. This will provide minimal ground disturbance. A majority of the land use is tilled farm land and in our existing right of way. The overhead cable that is in this right of way has been in place since the early 1950s and has been maintained appropriately. The conversion of overhead to underground line also benefits the migratory birds by displacing overhead lines that can be hazardous to slow moving birds such as cranes and swans. As the NEPA review has not been completed, this project is very similar to the projects that have already received NEPA approval

DAC's: The Disadvantaged Community that will benefit from this project are: 38079951700.

Standards of Success

Conversion Project 1:

Objective Goals: This project will immediately improve the reliability to 400 meters on and around the Turtle Mountain Reservation with an extended benefit to the areas around Rolla and St. John. The total benefit will include the contingency switching which will improve the grid response and resiliency to approximately 2,200 meters in northern Rolette County including the Turtle Mountain reservation. This line also will improve the reliability to the port of entry near St. John.

The last five-year average SAIDI value for the project feeder is 1.7 with a high in 2018 (5.4). This project should result in a drop in this number to less than 1. The rest of the three-phase on this feeder is already underground and any outages would be due to overhead single-phase taps that would significantly reduce the number of consumers affected and the duration of the outage.

Overall magnitude and duration of outages are significantly reduced as the underground will have minimal impact from weather events. The frequency of events is also significantly reduced as the primary backbone of the grid is buried with overhead single-phase taps remaining, overall minimizing the number of impacted members.

Conversion Project 2:

Objective Goals: This project will immediately improve the reliability to 170 meters in the northern Turtle Mountain Reservation by converting the single-phase overhead to three-phase underground. This project will allow housing and businesses to expand into the northern part of the reservation without having to worry about reliability issues that can come with having overhead line. This project will tie two feeders together to provide more flexibility during outage and maintenance times. The total benefit will include the contingency switching which will improve the grid response and resiliency to approximately 1,250 meters in northern Rolette County including the Turtle Mountain reservation. This line also will serve as a reliable back feed to the port of entry near St. John.

The last five-year average SAIDI value for the project area is 15.8 with a high in 2022 (42.5). This project should result in a drop in this number to less than 5. The turtle mountain area is prone to frost and ice issues and undergrounding this line will greatly improve the reliability and duration of the outages.

Overall magnitude and duration of outages are significantly reduced as the underground will have minimal impact from weather events. The frequency of events is also significantly reduced as the primary backbone of the grid is buried with overhead single-phase taps remaining, overall minimizing the number of impacted members.

Conversion Project 3:

Objective Goals: This project will immediately improve the reliability to 187 member meters that are fed from the Rocklake substation in northern Towner County. Having 3-phase overhead line leaves these entire feeders susceptible to weather events with extended outage times. Undergrounding these 3-phase lines not only drastically improves reliability for the Rocklake substation but also the adjacent substations where these feeders act as the contingency feed. Underground these lines also removes poles from farm fields that often get hit during farming operations. These types of outages create a public safety issue and can be costly to the member.

The last five-year average SAIDI value due for the project feeders is 2.8 with a high in 2021 (4.5). This project should result in a drop in this number to less than 1. The rest of the main three-phase feeders is already underground and any outages would be due to overhead single-phase taps that would significantly reduce the number of consumers affected and the duration of the outage.

Overall magnitude and duration of outages are significantly reduced as the underground will have minimal impact from weather events. The frequency of events is also significantly reduced as the primary backbone of the grid is buried with overhead single-phase taps remaining.

Conversion Project 4:

Objective Goals: This project will immediately improve the reliability to 33 member meters being fed on this line north of Rolla with an extended benefit to the areas in the northern Turtle Mountain Reservation and St. John. This project will immediately reduce the magnitude, frequency, and duration of grid outages due to weather events and will support the normal and contingency feeds to northern Rolette County. This will also reduce the frequency and duration of outages experienced by the Wind Farm's Operation and Maintenance building. This line also will serve as a reliable back feed to the port of entry near St. John.

The last five-year average SAIDI value due for the project line is 4.3 with a high in 2018 (7.9). This project should result in a drop in this number to less than 1.

Conversion Project 5:

Objective Goals: This project will immediately improve the reliability to 213 member meters being fed on this line near the Canadian border in north central Rolette County. This line will also increase the capacity and reliability to the area by balancing the load that is currently served by a single-phase line.

The last five-year average SAIDI value for the project area is 7.3 with a high in 2022 (21.5). This project should result in a drop in this number to less than 2. The Turtle Mountain area is prone

to frost and ice issues and this area is remote and difficult to travel to in the winter months. Undergrounding this line should result in a significant improvement in outage frequency.

Project Timeline

Conversion Project 1:

January 2024: Order Material (up to 1 year lead time)
January 2024 – March 2025: Route planning, easement work and project staking. Receive material.
May – June 2025: Start Construction in Substation
Mid-June 2025: Start plowing the new cable route
July -August 2025: Terminate the cable and energize

Conversion Project 2:

January, 2024: Order Material (up to 1 year lead time)
January 2024 – March 2025: Route planning, easement work and project staking. Receive material.
May – June 2025: Start Construction in Substation
Mid-July 2025: Start plowing the new cable route
August-September 2025: Terminate the cable and energize

Conversion Project 3:

January 2024 – April 2024: Route planning, easement work and project staking. Receive material.
May 2024: Start Construction in Rocklake Substation if road restrictions allow
June 2024: Start plowing the new cable route
July -August 2024: Terminate the cable and energize

Conversion Project 4:

January, 2024: Order Material (up to 1 year lead time)
January 2024 – May 2025: Route planning, easement work, Environmental Approval and project staking. Receive material.
Mid-June -August 2025: Start plowing the new cable route
August - September 2025: Terminate the cable and energize

Conversion Project 5:

January, 2024: Order Material (up to 1 year lead time)

January 2024 – May 2025: Route planning, easement work, Environmental Approval and project staking. Receive material.
Mid-June -August 2025: Start plowing the new cable route
August - September 2025: Terminate the cable and energize

Project Budget

Conversion Project 1:

Total Budget = $325,000
Material costs:
- Cable = $150,000
- Switches = $75,000
- Termination Equipment = $30,000

Install Labor Costs:
- Contractor = $40,000
- Internal Labor = $22,000

Admin/Engineering: $8,000

Conversion Project 2:

Total Budget = $555,752
Material costs:
- Cable = $321552
- Switches = $70,000
- Termination Equipment = $60,000

Install Labor Costs:
- Contractor = $65,000
- Internal Labor = $30,000

Admin/Engineering: $9,200

Conversion Project 3:

Total Budget = $768,200
Material costs:
- Cable = $529,000
- Termination Equipment = $63,000

Install Labor Costs:
- Contractor = $110,000
- Internal Labor = $58,000

Admin/Engineering: $8,200

Conversion Project 4:

Total Budget = $642,000

Material costs:

- Cable = $411,500
- Termination Equipment = $68,000

Install Labor Costs:

- Contractor = $98,000
- Internal Labor = $55,000

Admin/Engineering: $9,500

Conversion Project 5:

Total Budget = $401,800

Material costs:

- Cable = $237,600
- Termination Equipment = $60,000

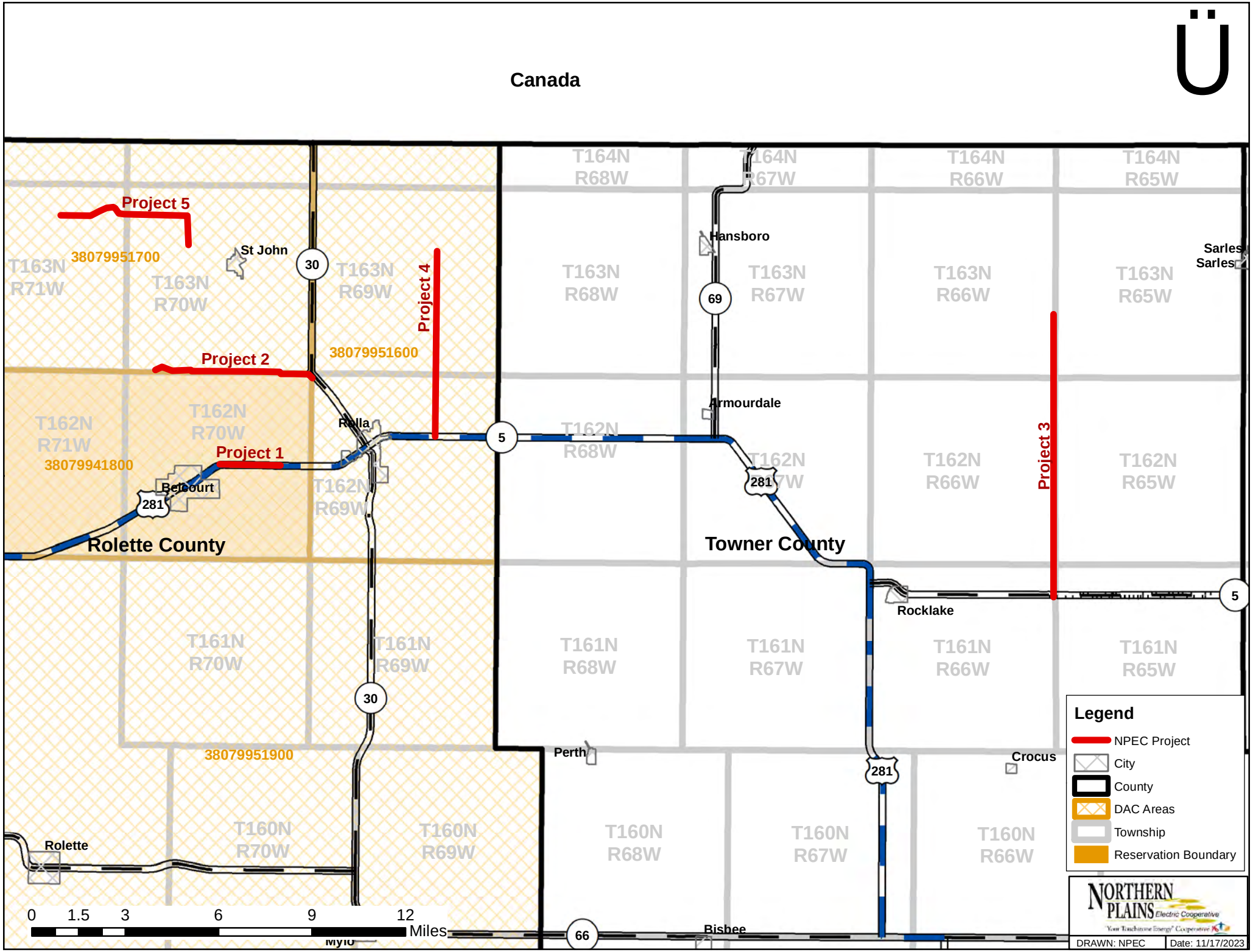
Install Labor Costs:

- Contractor = $65,000
- Internal Labor = $30,000

Admin/Engineering: $9,200

Total Budget of all 5 Projects: $2,692,752

Attachment 1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Project 4
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Armourdale
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Project 3
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Crocus
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T160N R68W
T160N R67W
T160N R66W
Rolette
0 1.5 3 6 9 12 Miles
66
Bisbee
Legend
NPEC Project
City
County
DAC Areas
Township
Reservation Boundary
NORTHERN PLAINS Electric Cooperative
DRAWN: NPEC
Date: 11/17/2023

Attachment 2

THE OKONITE COMPANY

Post Office Box 340
Ramsey, New Jersey 07446
Telephone: (201) - 825-0300
E-Mail: okonite@okonite.com

Buy America Certification

The Okonite Company, Inc. certifies that all its products are manufactured in the United States of America, and that all its products comply with the Buy America requirements of the United States Code and of all regulations which implement the applicable statutory provisions of the Code.

The Okonite Company, Inc.

By: John F. Silver
John F. Silver
President and COO

Ashten Dewald

From: Cory Kiemele <ckiemele@epsmpls.com>
Sent: Wednesday, March 22, 2023 11:24 AM
To: Ashten Dewald
Subject: FW: [External] FW: S&C Buy America

See below. What additional information do you need?

Cory Kiemele
Energy Product Sales
Cell: 701-351-1695

From: Thomas, Stanley <Stanley.Thomas@sandc.com>
Sent: Wednesday, March 22, 2023 11:02 AM
To: Cory Kiemele <ckiemele@epsmpls.com>
Cc: McInnis, Kristin <Kristin.McInnis@sandc.com>; Kennedy, Cheryl <cheryl.kennedy@sandc.com>; Product Marketing Assignments <ideas-pmktg-sces@iad-prod1.mailer.aha.io>
Subject: RE: [External] FW: S&C Buy America

Hi Corey,

Our product offering will always fall under one of 3 types of definitions, not a combination of 2 or 3: "Iron or Steel," Construction Material, or "manufactured product" as you mention below. We generally consider our products to be "manufactured products" which use a "cost of components" method to evaluate whether we meet the origin requirements.

(B) in the case of manufactured products, that— (i) the manufactured product was manufactured in the United States; and (ii) the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation

Based on this, Vista meets the requirements for a manufactured product for BABA.

Thanks,
-Stan

From: Thomas, Stanley
Sent: Tuesday, March 21, 2023 4:53 PM
To: Cory Kiemele <ckiemele@epsmpls.com>
Subject: RE: [External] FW: S&C Buy America

Hi Cory,

Checking in on an item with respect to the info you provided in blue below. Should be able to get back to you tomorrow.

Thanks,
-Stan

Elastimold Underground Cable Accessories

Elastimold® has one of the largest product offerings in the industry of IEEE 200 loadbreak and deadbreak and 600 Amp and 900 Amp medium voltage EPDM rub molded products and epoxy components.

Press Release - ABB advances electrical worker safety with expanded Elastimol solutions

Elastimold grounding innovation in tED Magazine pages 50-52

Benefits & News

- All products are manufactured in the USA in advanced facilities
- Centralized stocking in the USA
- 100% tested
- Elastimold's brand's long, innovative history includes pioneering such products as extended, repair, and jacket elbows
- Elastimold's accessories, available from 5-138 kV, are used to connect, ground, splice, terminate, and protect ur cable

Products

- Elastimold™ Veri-Spike™ grounding-aid device – NEW
- 200 Amp Deadbreak Elbows
- 200 Amp Loadbreak Elbows
- 600 Amp Elbow Connectors

Attachment 3

Resumes

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1. Contact Information

[Ashten Dewald, PE 40209]
Engineering Manager
Northern Plains Electric Cooperative
PO Box 180 Carrington, ND 58421
[1 (701) 652-1852]
[ashtend@nplains.com]

2. Education

1. [Sargent Central Public Highschool]
    a. Graduated May 2007
2. South Dakota School of Mines and Technology
    a. Aug 2007 – Dec 2011
    b. Bachelors of Science in Electrical Engineering

3. Training

North Dakota Professional Engineer

4. Professional Experience

- Engineering Manager Feb 2022-Present
  [Northern Plains Electric Cooperative in Carrington, ND]
  Oversee the day-to day activities of the engineering department. Work with the engineering department to develop work plans and implement design infrastructure in accordance with current specifications.

- Engineering & Operations Manager Jan 2019 - Feb 2022
  [Northern Plains Electric Cooperative in Carrington, ND]
  Oversee the day-to day activities of the engineering and operations department. Work with the engineering department to develop work plans and implement design infrastructure in accordance with current specifications. Work with the operations and line personnel to implement the designs and build distribution facilities in a safe and efficient manner.

- System Engineer Dec 2013 – Jan 2019
  [Northern Plains Electric Cooperative in Carrington, ND]

Responsible for the design, coordination, overcurrent protection, voltage regulation, load balancing, planning, and troubleshooting of the Cooperative's electric power distribution system.

- Electrical Engineer Jan 2012-Dec 2013
  [John Deere Power Electronic Solutions in Fargo, ND]
  Test verification and design to verify conformance to SAE standards on power electronics circuitry and equipment along with monitoring and analysis on prototypes.

- Student Sept 2007 – Dec 2011
  [South Dakota School of Mines and Technology]
  Rapid City, SD

- Electrical Engineer Intern May 2011-Aug 2011
  [John Deere Electronic Solutions in Fargo, ND]
  Test monitoring and verification for conformance to SAE standards on power electronics circuitry and equipment.

- Electrical Engineer Intern May 2010-Aug 2010
  [John Deere in Waterloo, IA]
  Test and user Interface creation in LabVIEW to coordinate with equipment in the lab to perform testing on smaller electronics.

5. Appointments

I do not have any Appointments