Minnkota Power COOPERATIVE
A Touchstone Energy® Cooperative

5301 32nd Ave. South
Grand Forks, ND 58201
Phone 701.795.4000
www.minnkota.com

April 9, 2024

North Dakota Department of Environmental Quality, Division of Air Quality
4201 Normandy Street
Bismarck, ND 58503-1324

Re: Application for a Permit to Construct for Minnkota Power Cooperative Colfax Plant

To whom it may concern:

Minnkota Power Cooperative, Inc. (Minnkota) operates a substation facility in Colfax, ND at which it plans to relocate two existing diesel-fueled generators which are currently in operation at its Oxbow facility, which has an existing Minor Source Permit to Operate AOP-27859-v5.0. Minnkota has determined a minor source Permit to Construct is required for the relocation; an application for which is attached to this letter.

Proposed Project Description

Minnkota currently operates two existing 2001 model year Caterpillar Model 3516B diesel-fueled generator sets, each rated at 2,881 brake horsepower (bph), each of which is outfitted with a diesel oxidation catalyst system. The generators are proposed to be relocated to the Colfax facility, to serve in a similar capacity as currently used at Oxbow.

AOP-27859-v5.0 features a synthetic minor limit of 38.3 pounds per hour (lb/hr) at each generator, which Minnkota proposes to retain at the Colfax facility. This limit is paired with a combined limit on hours of operation to attain a synthetic minor source status for the facility. While the Oxbow facility permit has a limitation of 5,219 operating hours per 12-month rolling period. Minnkota proposes a similar but slightly lower synthetic minor limitation for Colfax of 4,960 hours per 12-month rolling period.

Applicable New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP) and Maximum Achievable Control Technology (MACT) Requirements

Based on the date of manufacture, the rated capacity of the unit, and its intended use, the generators will remain subject to MACT Subpart ZZZZ (40 CFR Part 63, Subpart ZZZZ) and will not be subject to NSPS Subpart IIII (40 CFR Part, 60, Subpart IIII). The relocation of generators does not constitute “modification” or “reconstruction” under NSPS.

As it relates to MACT Subpart ZZZZ, the same requirements which currently apply at Oxbow will continue to apply to the generators as existing compression ignition engines greater than 500 hp located at area sources of hazardous air pollutants (HAP), constructed before June 12, 2006.

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Project Emission Calculations

In addition to reviewing applicability of federal emission standards, Minnkota performed a review of potential emissions from the diesel generators to evaluate whether the project would result in the Colfax facility becoming a major source under federal New Source Review (NSR) and the Title V Operating Permit program.

As demonstrated in the table below, the potential to emit (PTE) from the project for all regulated NSR pollutants emitted is less than the corresponding PSD and Title V major facility thresholds. Consequently, PSD is not triggered as a result of this project, nor is a Title V permit required.

Table 1. PTE on a Tons per Year Basis

	NOx	SO_2	CO	PM	PM_{10}	$PM_{2.5}$	VOC	Single HAP	Total HAP	GHG (CO_2e)
Generator 1	47.5	0.03	6.56	7.14	7.14	7.14	8.29	0.03	0.09	3,766
Generator 2	47.5	0.03	6.56	7.14	7.14	7.14	8.29	0.03	0.09	3,766
Facility Total	95.0	0.07	13.12	14.27	14.27	14.27	16.57	0.05	0.18	7,532
Major Source Threshold	100	100	100	100	100	100	100	10	25	100,000

The table above identifies the PTE of the NSR pollutants for the two generators based on continuous total operation of 4,960 hours. Emissions from the project were calculated based upon AP-42 factors for diesel combustion for CO, SO_2, PM, PM_{10}, $PM_{2.5}$, VOC and HAP emissions, the proposed 38.3 lb/hr synthetic minor limit for NOx emissions, a 70% control efficiency for CO, and the GHG Mandatory Reporting Rule emission factors for CO_2 emissions. The calculations are attached for reference.

Please contact me at 701-795-4289 or by email at sroberts@minnkota.com if you have any questions or need more information.

Sincerely,

Samantha Roberts

Samantha Roberts
Environmental Specialist
Minnkota Power Cooperative, Inc.

Enclosure: Permit to Construct Application

PERMIT APPLICATION FOR AIR CONTAMINANT SOURCES

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8516 (9-2021)

SECTION A - FACILITY INFORMATION

Name of Firm or Organization Minnkota Power Cooperative, Inc.		
Applicant's Name Samantha Roberts		
Title Environmental Specialist	Telephone Number (701) 795-4289	E-mail Address sroberts@minnkota.com
Contact Person for Air Pollution Matters Samantha Roberts		
Title Environmental Specialist	Telephone Number (701) 795-4289	E-mail Address sroberts@minnkota.com
Mailing Address (Street & No.) 5301 32nd Ave S		
City Grand Forks	State North Dakota	ZIP Code 58201
Facility Name COLFAX		
Facility Address (Street & No.) 6495 170 AVE SE		
City COLFAX	State North Dakota	ZIP Code 58018

County Richland	Coordinates NAD 83 in Decimal Degrees (to forth decimal degree)	
	Latitude 46.47164300	Longitude -96.86241400

Legal Description of Facility Site: BEG SECR SE1/4 29 135 49; N700'W700' E700'/BEG; PARCEL ID 38-0305-00276.000

Quarter	Quarter	Section	Township	Range
SE	SE	29	135	49

Land Area at Facility Site 11.25 Acres (or) _____ Sq. Ft.	MSL Elevation at Facility 910

SECTION B – GENERAL NATURE OF BUSINESS

Describe Nature of Business	North American Industry Classification System Number	Standard Industrial Classification Number (SIC)
Electric Power Generation	221112, 221122	4911

SECTION C – GENERAL PERMIT INFORMATION

Type of Permit? ☒ Permit to Construct (PTC) ☐ Permit to Operate (PTO)

If application is for a Permit to Construct, please provide the following data:

Planned Start Construction Date	Planned End Construction Date
06/2024	12/2024

SECTION D – SOURCE IDENTIFICATION AND CATEGORY OF EACH SOURCE INCLUDED ON THIS PERMIT APPLICATION

		Permit to Construct				Minor Source Permit to Operate						
Your Source ID Number	Source or Unit (Equipment, Machines, Devices, Boilers, Processes, Incinerators, Etc.)	New Source	Existing Source Modification	Existing Source Expansion	Existing Source Change of Location	New Source	Existing Source Initial Application	Existing Source After Modification	Existing Source After Expansion	Existing Source After Change of Location	Existing Source After Change of Ownership	Other
COLFAX 1	Diesel engine-driven generator set	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐
COLFAX 2	Diesel engine-driven generator set	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Add additional pages if necessary

SECTION D2 – APPLICABLE REGULATIONS

Source ID No.	Applicable Regulations (NSPS/MACT/NESHAP/etc.)
Facility-wide	40 CFR 63 Subpart ZZZZ

SECTION E – TOTAL POTENTIAL EMISSIONS

Pollutant	Amount (Tons Per Year)
NO_x	See PTE Calculations
CO	
PM	

Pollutant	Amount (Tons Per Year)
PM_{10} (filterable and condensable)	
$PM_{2.5}$ (filterable and condensable)	
SO_2	
VOC	
GHG (as CO_2e)	
Largest Single HAP	
Total HAPS	

*If performance test results are available for the unit, submit a copy of test with this application. If manufacturer guarantee is used provide spec sheet.

SECTION F1 – ADDITIONAL FORMS

Indicate which of the following forms are attached and made part of the application

■ Air Pollution Control Equipment (SFN 8532)	☐ Fuel Burning Equipment Used for Indirect Heating (SFN 8518)
☐ Construct/Operate Incinerators (SFN 8522)	■ Hazardous Air Pollutant (HAP) Sources (SFN 8329)
☐ Natural Gas Processing Plants (SFN 11408)	☐ Manufacturing or Processing Equipment (SFN 8520)
☐ Glycol Dehydration Units (SFN 58923)	☐ Volatile Organic Compounds Storage Tank (SFN 8535)
☐ Flares (SFN 59652)	■ Internal Combustion Engines and Turbines (SFN 8891)
☐ Grain, Feed, and Fertilizer Operations (SFN 8524)	☐ Oil/Gas Production Facility Registration (SFN 14334)

SECTION F2 – OTHER ATTACHMENTS INCLUDED AS PART OF THIS APPLICATION

1.	Plot Plan (3 figures)	4.	
2.	XQ2000 Spec Sheet	5.	
3.	PTE Calculations	6.	

I, the undersigned applicant, am fully aware that statements made in this application and the attached exhibits and statements constitute the application for Permit(s) to Construct and/or Operate Air Contaminant sources from the North Dakota Department of Environmental Quality and certify that the information in this application is true, correct and complete to the best of my knowledge and belief. Further, I agree to comply with the provisions of Chapter 23.1-06 of the North Dakota Century Code and all rules and regulations of the Department, or revisions thereof. I also understand the permit is nontransferable and, if granted a permit, I will promptly notify the Department upon sale or legal transfer of this permitted establishment.

Signature	Date
Samantha Roberts	4/9/2024

INSTRUCTIONS

SITE PLANS TO BE ATTACHED TO APPLICATION:

Prepare and attach a plot plan drawn to scale or properly dimensioned, showing at least the following:

a. The property involved and the outlines and heights of all buildings on the property. Identify property lines plainly. Also, indicate if there is a fence around the property that prevents public access.

b. Location and identification of all existing or proposed equipment, manufacturing processes, etc., and points of emission or discharge of air contaminants to the atmosphere.

c. Location of the facility or property with respect to the surrounding area, including residences, businesses and other permanent structures, streets and roadways. Identify all such structures and roadways. Indicate direction (**NORTH**) on the drawing and the prevailing wind direction.

EQUIPMENT PLANS AND SPECIFICATIONS FOR PERMIT TO CONSTRUCT:

Supply plans and specifications, including as a minimum an assembly drawing, dimensioned and to scale, in plan, elevation and as many sections as are needed to show clearly the design and operation of the equipment and the means by which air contaminants are controlled.

The following must be shown:

a. Size and shape of the equipment. Show exterior and interior dimensions and features.

b. Locations, sizes, and shape details of all features which may affect the production, collection, conveying, or control of air contaminants of any kind, location, size, and shape details concerning all material handling equipment.

c. All data and calculations used in selecting or designing the equipment.

d. Horsepower rating of all internal combustion engines driving the equipment.

NOTE: **STRUCTURAL DESIGN CALCULATIONS AND DETAILS ARE NOT REQUIRED.** WHEN STANDARD COMMERCIAL EQUIPMENT IS TO BE INSTALLED, THE MANUFACTURER'S CATALOG DESCRIBING THE EQUIPMENT MAY BE SUBMITTED IN LIEU OF ITEMS a, b, c, and d OF ABOVE, WHICH THE CATALOG COVERS. ALL INFORMATION REQUIRED ABOVE THAT THE CATALOG DOES NOT CONTAIN MUST BE SUBMITTED BY THE APPLICANT.

ADDITIONAL INFORMATION MAY BE REQUIRED:

If the application is signed by an authorized representative of the owner, a LETTER OF AUTHORIZATION must be attached to the application.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324
(701) 328-5188

PERMIT APPLICATION FOR INTERNAL COMBUSTION ENGINES AND TURBINES

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8891 (9-2021)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.
- Must include SFN 8516 or SFN 52858

SECTION A – GENERAL INFORMATION

Name of Firm or Organization	Facility Name
Minnkota Power Cooperative, Inc.	COLFAX

SECTION B – FACILITY AND UNIT INFORMATION

Source ID Number (From form SFN 8516)
COLFAX 1 & 2

Type of Unit (check all that apply)

- ☐ Stationary Natural Gas-Fired Engine
- ■ Stationary Diesel and Dual Fuel Engine
- ☐ Stationary Gasoline Engine
- ☐ Stationary Natural Gas-Fired Turbine
- ■ Other – Specify:
- ☐ Emergency Use Only
- ■ Non-Emergency Use
- ☐ Peaking
- ☐ Demand Response

SECTION C – MANUFACTURER DATA

Make	Model	Date of Manufacture
Caterpillar	3516B	01/01/2001

Reciprocating Internal Combustion Engine

☐ Spark Ignition ■ Compression Ignition ☐ Lean Burn
☐ 4 Stroke ☐ 2 Stroke ☐ Rich Burn

Maximum Rating (BHP @ rpm)	Operating Capacity (BHP @ rpm)
2,881	2,881

Engine Subject to:

- ☐ 40 CFR 60, Subpart IIII
- ☐ 40 CFR 60, Subpart JJJJ
- ■ 40 CFR 63, Subpart ZZZZ
- ☐ 40 CFR 60, Subpart OOOO (for compressors)
- ☐ 40 CFR 60, Subpart OOOOa (for compressors)

Turbine
Dry Low Emissions? ☐ Yes ☐ No

Heat Input (MMBtu/hr)	Maximum Rating (HP)	75% Rating (HP)	Efficiency
NA	NA	NA	NA

Turbine Subject to:
☐ 40 CFR 60, Subpart GG ☐ 40 CFR 60, Subpart KKKK

SECTION D – FUELS USED

Natural Gas (10^6 cu ft/year) NA	Percent Sulfur NA	Percent H_2S NA
Oil (gal/year) 336,040 (per generator)	Percent Sulfur <0.05%	Grade No. 2
LP Gas (gal/year) NA	Other – Specify: NA	

SECTION E – NORMAL OPERATING SCHEDULE

Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Peak Production Season (if any)
24	7	52	2,480 each; 4,960 combined	

SECTION F – STACK PARAMETERS

Emission Point ID Number		Stack Height Above Ground Level (feet)	
		12	
Stack Diameter (feet at top)	Gas Discharged (SCFM)	Exit Temp (°F)	Gas Velocity (FPS)
8.69	89122	157.4	29.48

SECTION G – EMISSION CONTROL EQUIPMENT

Is any emission control equipment installed on this unit?

☐ No ■ Yes – Complete and attach form SFN 8532

SECTION H – MAXIMUM AIR CONTAMINANTS EMITTED

Pollutant	Maximum Pounds Per Hour	Amount (Tons Per Year)	Basis of Estimate*
NO_x		See PTE Calculations	See PTE Calculations
CO			
PM			
PM_{10} (filterable and condensable)			
$PM_{2.5}$ (filterable and condensable)			
SO_2			
VOC			
GHG (as CO_2e)			
Largest Single HAP			
Total HAPS			

* If performance test results are available for the unit, submit a copy of test with this application, if manufacture data used, submit manufacturers specification sheets.

IS THIS UNIT IN COMPLIANCE WITH ALL APPLICABLE AIR POLLUTION RULES AND REGULATIONS?

■ YES ☐ NO

If "NO" a Compliance Schedule (SFN 61008) must be completed and attached.

Attach and label separate sheet(s) if you need more space to explain any system or answers or to provide complete listings of Emissions, Contaminants, or other items.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324
(701) 328-5188

PERMIT APPLICATION FOR HAZARDOUS AIR POLLUTANT (HAP) SOURCES

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8329 (9-2021)

SECTION A1 - APPLICANT INFORMATION

Name of Firm or Organization Minnkota Power Cooperative, Inc.		
Applicant's Name Samantha Roberts		
Title Environmental Specialist	Telephone Number (701) 795-4289	E-mail Address sroberts@minnkota.com
Mailing Address (Street & No.) 5301 32nd Ave S		
City Grand Forks	State North Dakota	ZIP Code 58201

SECTION A2 - FACILITY INFORMATION

Contact Person for Air Pollution Matters Samantha Roberts		
Title Environmental Specialist	Telephone Number (701) 795-4289	E-mail Address sroberts@minnkota.com
Facility Address (Street & No. or Lat/Long to Nearest Second) 6495 170 Ave SE		
City COLFAX	State North Dakota	ZIP Code 58018
County Richland	Number of Employees at Location 0	
Land Area at Plant Site 11.25 Acres (or) Sq. Ft.	MSL Elevation at Plant 910	

Describe Nature of Business/Process

Load management

SECTION B – STACK DATA

Inside Diameter (ft) 8.69 ft equivalent	Height Above Grade (ft) 12	
Gas Temperature at Exit (°F) 157.4	Gas Velocity at Exit (ft/sec) 29.48	Gas Volume (scfm) 89122
Basis of any Estimates (attach separate sheet if necessary) 2002 Permit to Construct Application		
Are Emission Control Devices in Place? If YES – Complete SFN 8532 ☑ Yes ☐ No		
Nearest Residences or Building 16990 COUNTY ROAD 4; Residence	Distance (ft) ~660	Direction SW
Nearest Property Line Parcel 03-0000-00777.000; Agricultural	Distance (ft) ~140	Direction East

SECTION C – EMISSION STREAM DATA

Source ID Number SFN 8516 COLFAX 1	Mean Particle Diameter (um) NA
Flow Rate (scfm) 89122	Drift Velocity (ft/sec) 29.48
Stream Temperature (°F) 157.4	Particulate Concentration (gr/dscf) NA
Moisture Content (%) NA	Halogens or Metals Present? NA
Pressure (in. Hg) NA	Organic Content (ppmv) NA
Heat Content (Btu/scfm) NA	O_2 Content (%) 15%

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted See PTE Calculations	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr)	Emission Source (describe)
Source Classification (process point, process fugitive, area fugitive)	Pollutant Class and Form (organic/inorganic - particulate/vapor)
Concentration in Emission Stream (ppmv)	Vapor Pressure (in. Hg @ °F)
Solubility	Molecular Weight (lb/lb-mole)
Absorptive Properties	

Pollutant Emitted	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr)	Emission Source (describe)
Source Classification (process point, process fugitive, area fugitive)	Pollutant Class and Form (organic/inorganic - particulate/vapor)
Concentration in Emission Stream (ppmv)	Vapor Pressure (in. Hg @ °F)
Solubility	Molecular Weight (lb/lb-mole)
Absorptive Properties	

(Add additional pages if necessary)

Signature of Applicant Samantha Roberts Digitally signed by Samantha Roberts Date: 2024.04.09 11:59:01 -05'00'	Date

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324
(701) 328-5188

SECTION C – EMISSION STREAM DATA

Source ID Number SFN 8516 COLFAX 2	Mean Particle Diameter (um) NA
Flow Rate (scfm) 89122	Drift Velocity (ft/sec) 29.48
Stream Temperature (°F) 157.4	Particulate Concentration (gr/dscf) NA
Moisture Content (%) NA	Halogens or Metals Present? NA
Pressure (in. Hg) NA	Organic Content (ppmv) NA
Heat Content (Btu/scfm) NA	O_2 Content (%) 15%

SECTION D – POLLUTANT SPECIFIC DATA
(Complete One Box for Each Pollutant in Emission Stream)

Pollutant Emitted See PTE Calculations	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr)	Emission Source (describe)
Source Classification (process point, process fugitive, area fugitive)	Pollutant Class and Form (organic/inorganic - particulate/vapor)
Concentration in Emission Stream (ppmv)	Vapor Pressure (in. Hg @ °F)
Solubility	Molecular Weight (lb/lb-mole)
Absorptive Properties	

Pollutant Emitted	Chemical Abstract Services (CAS) Number
Proposed Emission Rate (lb/hr)	Emission Source (describe)
Source Classification (process point, process fugitive, area fugitive)	Pollutant Class and Form (organic/inorganic - particulate/vapor)
Concentration in Emission Stream (ppmv)	Vapor Pressure (in. Hg @ °F)
Solubility	Molecular Weight (lb/lb-mole)
Absorptive Properties	

(Add additional pages if necessary)

Signature of Applicant Samantha Roberts	Date 4/9/2024

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324
(701) 328-5188

PERMIT APPLICATION FOR AIR POLLUTION CONTROL EQUIPMENT

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8532 (9-2021)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.
- Must also include forms SFN 8516 or SFN 52858

SECTION A – GENERAL INFORMATION

Name of Firm or Organization	Facility Name
Minnkota Power Cooperative, Inc.	COLFAX
Source ID No. of Equipment being Controlled COLFAX 1&2	

SECTION B – EQUIPMENT

Type: ☐ Cyclone ☐ Multiclone ☐ Baghouse ☐ Electrostatic Precipitator
☐ Wet Scrubber ☐ Spray Dryer ☐ Flare/Combustor
☐ Other – Specify: Oxidation Catalyst (Emission Control System)

Name of Manufacturer	Model Number	Date to Be Installed
NA	NA	Already installed

Application:
☐ Boiler ☐ Kiln ■ Engine ☒ Other – Specify:

Pollutants Removed	CO			
Design Efficiency (%)	70			
Operating Efficiency (%)	70			

Describe method used to determine operating efficiency:
Performance testing completed in 2019 to verify CO control efficiency.

SECTION CD – GAS CONDITIONS

Gas Conditions			Inlet	Outlet
Gas Volume (SCFM; 68°F; 14.7 psia)			NA	NA
Gas Temperature (°F)				
Gas Pressure (in. H_2O)				
Gas Velocity (ft/sec)				
Pollutant Concentration (Specify Pollutant and Unit of Concentration)	Pollutant	Unit of Concentration		
Pressure Drop Through Gas Cleaning Device (in. H_2O)				

INSTRUCTIONS FOR PERMIT APPLICATION FOR AIR POLLUTION CONTROL EQUIPMENT

1. Complete this form for each piece of equipment or process, which has air pollution control equipment installed, described in the following Permit Applications: Hazardous Air Pollutant (HAP) Sources (SFN 8329), Fuel Burning Equipment for Indirect Heating (SFN 8518); Manufacturing or Processing Equipment (SFN 8520); Incinerators/Crematories (SFN 8522); Internal Combustion Engines and Turbines (SFN 8891); and Glycol Dehydration Units (SFN 58923). Print or type all information. If an item does not apply, place NA in the appropriate space.

2. Type of Equipment - If the type is not one of those listed; provide enough information so the operating principal of the equipment can be determined.

3. List each pollutant which the device is intended to control, the efficiency of removal intended by the designer, and the actual efficiency under operating conditions.

4. Please attach the following:

   - A brief description and sketch of the air pollution control device if it is of unusual design or used in conjunction with other control devices. Show any bypass of the device and specify the conditions under which the bypass is used.

   - A description of what is done with collected air contaminants from the time they are collected until they reach the final disposal point. Include a description of the transportation methods used.

   - If a stack test has been conducted, attach a copy of the results, date of the test, a description of the techniques used, and the name and address of the organization which performed the test.

5. If the control device is a combustor (e.g.: thermal oxidizer, vapor combustion unit, etc.), include an estimate of potential greenhouse gas emissions (CO_2e).

SUBMIT YOUR APPLICATION WITH ALL SUPPORTING DOCUMENTS, ALONG WITH THE FORMS SPECIFIED IN THE FIRST PARAGRAPH ABOVE, TO:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324
(701) 328-5188

G:\Sub_Engl\Projects\Colfax - CO200\21598 - Oxbow Diesel Generator Relocation\Civil\Drawings\Civil\CO200-CIV-PTPLN-0003 30 Scale.dwg

LEGEND

PROPOSED	EXISTING	
X X	X X	FENCE - CHAIN LINK
	R/W	RIGHT-OF-WAY
		SECTION LINE
	TFO	TELEPHONE PEDESTAL
		SURFACE - GRAVEL
		CONCRETE - FOOTING
		CONCRETE - SLAB

30 0 30 60

NORTH

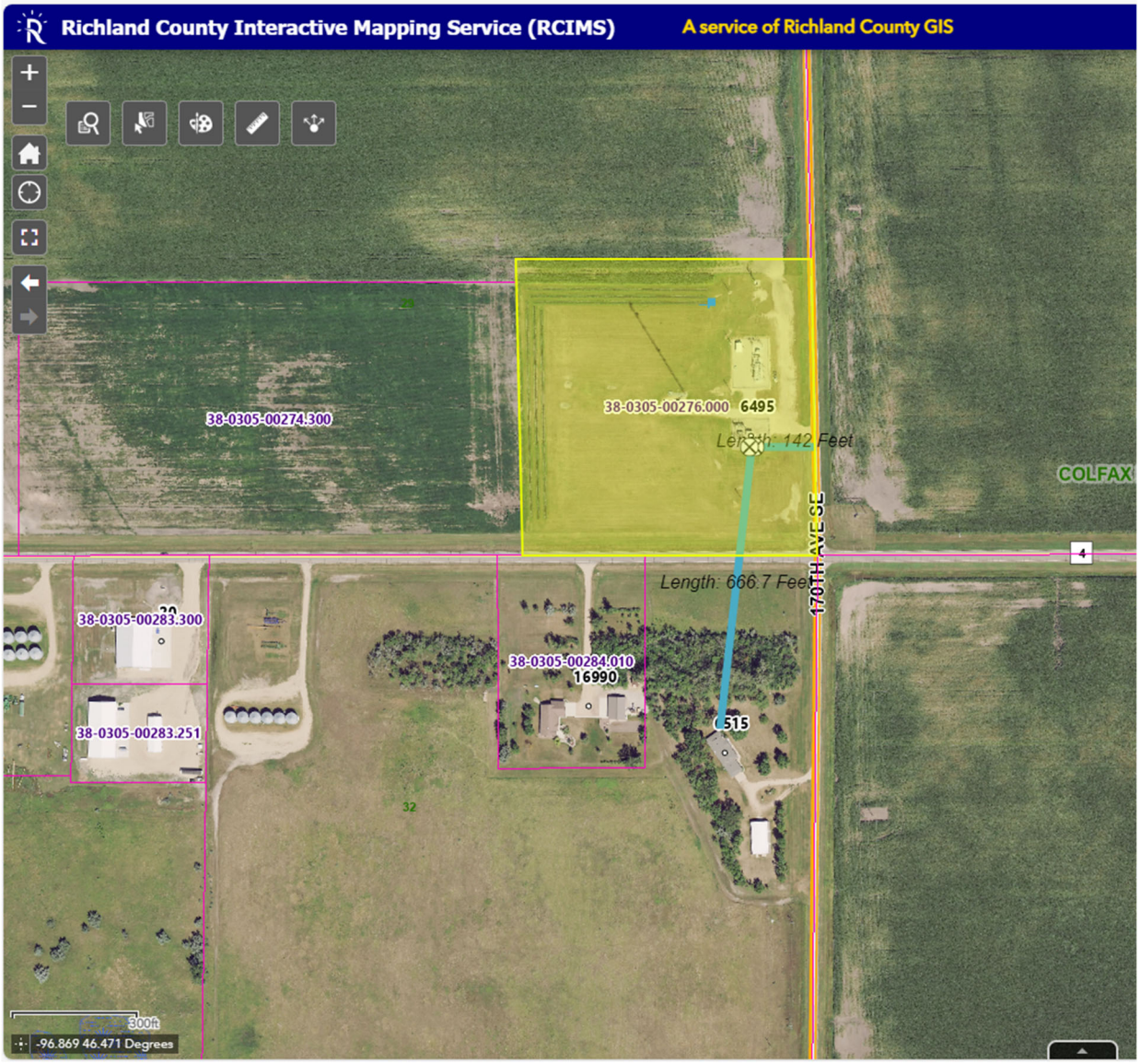
COLFAX SUBSTATION

PLOT PLAN

DIESEL GENERATOR RELOCATION

DRAWN JPB	PROJECT 21598	Minnkota Power COOPERATIVE	SCALE 1" = 30' UNIT
DATE 2/7/24	REVISION	A Touchstone Energy® Cooperative	DWG.NO. CO200-CIV-PTPLN-0003

Plot Plan – Colfax Substation



https://web.co.richland.nd.us/ParcelViewer/?extent=-10782874.8082%2C5856077.4407%2C-10782309.0145%2C5856341.3988%2C102100

Plot Plan – Colfax Substation

https://web.co.richland.nd.us/ParcelViewer/?extent=-10782859.4205%2C5856114.7262%2C-10782293.6268%2C5856378.6844%2C102100

2000KW DIESEL GENERATOR

XQ2000

24-HOUR SERVICE

877-291-3354

www.ers-cat.com

Energy Rental Solutions

TECHNICAL DATA

Materials and specifications are subject to change without notice.

Generator Set Technical Data		50 Hz		60 Hz	
	Units	Prime	Standby	Prime	Standby
Performance Specification		DM8754		DM8264	
Power Rating	kW (kVA)	1310 (1637)	1440 (1800)	1825 (2281)	2000 (2500)
Lubricating System					
Oil pan capacity	L (gal)	401.3 (106)		401.3 (106)	
Fuel System					
Fuel Consumption					
100% load	L (gal)	350.1 (92.5)	372.9 (98.5)	483.2 (127.6)	525.7 (138.9)
75% load	L (gal)	281.9 (74.5)	302.8 (80)	380 (100.4)	408.2 (107.8)
50% load	L (gal)	205.5 (54.3)	350.1 (92.4)	270.5 (71.5)	294.2 (77.7)
Fuel tank capacity	L (gal)	4731 (1,250)		4731 (1,250)	
Running time @ 75% rating	Hours	16.7	15.6	12.5	11.5
Cooling System					
Radiator coolant capacity including engine	L (gal)	630 (166)		630 (166)	
Air Requirements					
Combustion air flow	m^3/min (cfm)	114.8 (4052)	118.1 (4173)	174.7 (6169)	180.3 (6367)
Maximum air cleaner restriction	kPa (in H_2O)	6.2 (24.9)		6.2 (24.9)	
Generator cooling air	m^3/min (cfm)	140 (5,933)		168 (4,995)	
Exhaust System					
Exhaust flow at rated kW	m^3/min (cfm)	311.3 (10,993)	320.8 (11,335)	404 (14,260)	428.6 (15,137)
Exhaust stack temperature at rated kW – dry exhaust	°C (°F)	502.1 (935.8)	513.1 (955.6)	387 (728)	405 (762)
Noise Rating (with enclosure)					
@ 7 meters (23 feet)	dB(A)	77	78	78	79
@15 meters (50 feet)	dB(A)	73	74	74	75

Model	Length mm (in)	Width mm (in)	H mm (in)	Weight	
				With Lube Oil and Coolant kg (lb)	With Fuel, Lube Oil and Coolant kg (lb)
XQ2000 w/o Chassis	12 192 (480)	2438 (96)	2896 (114)	34 019 (75,000)	38 102 (84,000)
XQ2000 w/Chassis	12 192 (480)	2438 (96)	4267 (168)	38 102 (84,000)	42 184 (93,000)

STANDARD FEATURES

GENERATOR SET EMCP 3.3 LOCAL CONTROL PANEL

- Generator mounted EMCP 3.3 provides power metering, protective relaying and engine and generator control and monitoring.
- Provides MODBUS datalink to paralleling control for monitoring of engine parameters.
- Convenient service access for Caterpillar service tools (not included).
- Integration with the CDVR provides enhanced system monitoring.
- Ability to view and reset diagnostics of all controls networked on J1939 datalink.
- Network modules via the control panel removes the need for a separate service tool for troubleshooting.
- Real-time clock allows for date and time stamping of diagnostics and events.

EMCP 3.3 ENGINE OPERATOR INTERFACE

- Graphical display with positive image, transflective LCD, adjustable white backlight/ contrast.
- Two LED status indicators (1 red, 1 amber).
- Three engine control keys and status indicators (Run/Auto/Stop).
- Lamp test key.
- Alarm acknowledgement key.
- Display navigation keys.
- Two shortcut keys: Engine Operating Parameters and Generator Operating Parameters.
- Fuel level monitoring and control.

CIRCUIT BREAKER

- 3000A fixed type, 3 poles, genset mounted, electrically operated, insulated case circuit breaker.
- Solid state trip unit for overload (time overcurrent) and fault (instantaneous) overcurrent protection.
- Includes DC shunt trip coil activated on any monitored engine or electrical fault, 100 KA-interrupting capacity at 480 VAC.

VOLTAGE REGULATION AND POWER FACTOR CONTROL CIRCUITRY

- Generator mounted automatic voltage regulator, microprocessor based.
- Manual raise/lower voltage adjust capability and VAR/power factor control circuitry for maintaining constant generator power factor while paralleled with the utility.
- Includes RFI suppression, exciter limiter and exciter diode monitoring.
- Voltage and power factor adjustments are performed on the setting screen of the HMI touch screen.

FUEL TANK

- UL Listed 1250 gallon double walled.
- Fuel transfer system

CURRENT TRANSFORMERS

- CT's rated 3000:5 with secondaries wired to shorting terminal strips.

POTENTIAL TRANSFORMERS

- 4:1 ratio with primary and secondary fuse protection.

BUS BARS

- Three phase, plus full rated neutral, bus bars are tin-plated copper with NEMA standard hole pattern for connection of customer load cables and generator cables.
- Bus bars are sized for full load capacity of the generator set at 0.8 power factor.
- Includes ground bus, tin-plated copper, for connection to the generator frame ground and field ground cable.

AC DISTRIBUTION

- Provides 240 VAC for all module accessories.
- Includes controls to de-energize jacket water heaters and generator space heater when the engine is running.

SHORE POWER TWO (2)

- One (1) shore power connection distribution block for jacket water heaters.
- One (1) for generator space, battery charger, and fuel pump.

INTERNAL LIGHTING

- Four (4) internal DC lights with one (1) timer and two switches installed at each side of the container door.
- Three (3) internal AC lights.
- One (1) single duplex service receptacle.

BATTERY CHARGER AND BATTERIES

- 24 VDC/20A battery charger with float/equalize modes and charging ammeter.
- Maintenance free batteries.

EMERGENCY STOP PUSHBUTTON

- Two external ESPs located near each access door.