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ND Dept. of Health Emission Inventory Summary Year:

2014

Company: Minnkota Power Coop. Inc.
 PTO Number: T5-F76009
 Unit or Station: M.R. Young Unit 1 & 2

AIRS/AFS Source Code: 38-017-00117
 Annual Permit Fee Billing: YES
 Reviewed By: JDM

Individual Emission Sources

EUI	Source Unit	Fuel	PM	PM10	PM2.5	CPM	SO2	NOX	CO	VOC
1	Unit 1 Boiler	Coal	101.4	101.4	101.4	125.3	360.6	3194.7	140.1	54.1
		Oil #2	*	*	10.14	0.2	*	*	*	0.0
2	Unit 2 Boiler	Coal	191.0	191.0	19.1	149.2	1709.6	4998.2	22.6	80.2
		Oil #2	*	*	*	0.2	*	*	*	0.0
M1	Unit 1 Crusher House		0.4	0.3	0.3					
M2	Unit 1 Coal Silo		0.5	0.4	0.4					
M3	Unit 2 Crusher House		0.1	0.1	0.1					
M4	Unit 2 Coal Silo		1.9	1.3	1.3					
	Lime silo baghouse		0.0	0.0	0.0					
Total Facility Emissions (Less HAPS)			295.4	294.5	422.6	274.8	2070.2	8192.9	162.7	134.3

* Included in Coal combustion data.

Hazardous Air Pollutants (Tons)			
Pollutant/Chemical Name	Unit 1	Unit 2	Total
Hydrogen Chloride	7.73	11.45	19.18
Hydrogen Floride	7.73	11.45	19.18
Plant Totals	15.46	22.9	38.36

Fuels Combusted	Unit 1	Unit2	Total
Coal (Tons)	1545188	2290214	3,835,402
Natural Gas (MMScf)			
LPG/Propane (Gal)			
Bio-gas (MMScf)			
Low Sulfur Diesel (Gal)			
Distillate Oil (Gal)	274035	234476	508,511
Residual Oil (Gal)			
Other: Used Oil (Gal)			

Special Pollutants Emission Process	Tons		Gross MW Hours
	Hg	NH3	
Unit 1	0.03	8.24	2,008,692
Unit 2	0.09	4.18	3,016,384

Action	Date	Initial
Scanned		
Checked		
Database Entry	5-27-15	JDM



FUEL BURNING EQUIPMENT USED FOR INDIRECT HEATING
ANNUAL EMISSION INVENTORY REPORT
 NORTH DAKOTA DEPARTMENT OF HEALTH
 DIVISION OF AIR QUALITY
 SFN 8536 (06-14)

SK

GENERAL

Name of Firm or Organization Minnkota Power Cooperative, Inc		Permit to Operate Number T5-F76009	Year of Emissions 2014	
Mailing Address PO Box 127		City Center	State ND	ZIP Code 58530
Facility Name Milton R. Young Station		Facility Location 3401 24th Street SW		Emission Unit Number 1

EQUIPMENT INFORMATION

Manufacturer of Unit Babcock & Wilcox		Model Number RB-457	Max Heat Input (Btu/hr) 3035 Million	Gross Electricity Generated (MWh)* 2,008,692
Boiler Type: <input type="checkbox"/> Pulverized Tangential <input type="checkbox"/> Pulverized Wall Fired <input type="checkbox"/> Fluidized Bed <input checked="" type="checkbox"/> Cyclone <input type="checkbox"/> Stoker Type: _____ <input type="checkbox"/> Other: Specify: _____			Hours of Operation 7996	Net Electricity Generated (MWh)* 1,799,479

*Electric utility only.

FUELS USED

Type	Primary Fuel	Standby Fuel	Other Fuel
(ex. Lignite coal, Subbituminous coal, RDF, Natural gas, LPG, No. 2 oil, No. 6 oil. etc.)	Lignite		#2 Distillate Oil
Quantity of Fuel per Year (Specify Units: ex. ton, gal, cu.ft., etc.)	1,545,188 tons		274,035 gallons
Percent Ash (Coal Only) Average	8.37		
Percent Sulfur Maximum Average	1.10 max, 0.86 avg		<0.0015 %
Btu per Unit (Specify lb, ton, gal, etc.) Average	6740 Btu/lb		138020 Btu/gal
Percent Sodium in Coal Ash Average	7.08		

(The table below is used for single fuel combustion. Use the tables on the other side if multiple fuels are combusted and then summarize the total emissions per year in the "Tons" column below.)

TOTAL STACK EMISSIONS

Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate - Total PM (Filterable)			101.4
Particulate - PM ₁₀ (Filterable)			101.4
Particulate - PM _{2.5} (Filterable)			10.14
Particulate - CPM (Condensable)			125.5
Sulfur Dioxide			360.6
Nitrogen Oxides			3194.7
Carbon Monoxide			140.1
Total Organic Compounds: Nonmethane			54.1
Mercury***			59.8(lbs)
Ammonia***			8.2

**Submit SFN 19839 for Hazardous Air Pollutants if applicable.

***Title V coal and oil-fired units only.

I declare under the penalties of perjury that this report has been examined by me and to the best of my knowledge is a true, correct and complete report.

Print Name of Person Submitting Report Kevin Thomas	Title Plant Environmental Superintendent	Telephone Number 7017947278
Signature <i>Kevin Thomas</i>	Email Address kthomas@minnkota.com	Date 1/22/15

Return completed form to:
 North Dakota Department of Health
 Division of Air Quality
 918 E Divide, 2nd Floor
 Bismarck, ND 58501-1947
 Telephone: (701)328-5188

810

STACK EMISSIONS		Primary Fuel (Type): Lignite	Quality: 1,545,188 Tons
Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)	0.0106 lb/MMBtu	PMCEM Data	101.4
Particulate – PM ₁₀ (Filterable)	100% of Total PM	Assumed	101.4
Particulate – PM _{2.5} (Filterable)	10% of total	Assumed	10.14
Particulate – CPM (Condensable)	0.0131 lb/MMBtu	10/6/2011 Emissions Test	125.30
Sulfur Dioxide	CEM Data	CEM Data	360.6
Nitrogen Oxides	CEM Data	CEM Data	3194.7
Carbon Monoxide	CEM Data	CEM Data	140.1
Total Organic Compounds: Nonmethane	0.07 lb/ton	AP-42 Table 1.7-1	54.08
Mercury***	3.128 lb/TBtu	Hg CEM	59.8 (lbs)
Ammonia***	2.06 lb/hr	10/6/2011 Emissions Test	8.24

STACK EMISSIONS		Standby Fuel (Type):	Quality:
Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)			
Particulate – PM ₁₀ (Filterable)			
Particulate – PM _{2.5} (Filterable)			
Particulate – CPM (Condensable)			
Sulfur Dioxide			
Nitrogen Oxides			
Carbon Monoxide			
Total Organic Compounds: Nonmethane			
Mercury***			
Ammonia***			

STACK EMISSIONS		Other Fuel (Type): #2 Distillate Oil	Quality: 274035 gallons
Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total (Filterable)		Included in CEM data	
Particulate – PM ₁₀ (Filterable)		Included in CEM data	
Particulate – PM _{2.5} (Filterable)		Included in CEM data	
Particulate – CPM Condensable)	1.3 lb/1000 gal	AP-42 Table 1.3-2	0.18
Sulfur Dioxide		Included in CEM data	
Nitrogen Oxides		Included in CEM data	
Carbon Monoxide		Included in CEM data	
Total Organic Compounds: Nonmethane	0.2 lb/1000 gal	AP-42 Table 1.3-3	0.03
Other			

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Use additional sheets if necessary to provide calculations for quantities listed above.



**MANUFACTURING OR PROCESSING EQUIPMENT
ANNUAL EMISSION INVENTORY REPORT**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8537 (06-14)

810

GENERAL

Name of Firm or Organization Minnkota Power Cooperative, Inc		Permit to Operate Number T5-F76009	Year of Emissions 2014	
Mailing Address PO Box 127		City Center	State ND	ZIP Code 58530
Facility Name Milton R. Young Station		Facility Location 3401 24th Street SW		Actual Hours of Operation 7996
Source Unit Description Unit 1 coal silos			Emission Unit Number M2	

RAW MATERIAL INFORMATION

Raw Materials Introduced into Process	Quantity (Specify Units)
Lignite Coal	1,545,188 tons

FUELS USED

Type (ex. lignite, natural gas, LPG No. 2 fuel oil, No. 6 fuel oil. etc.)	Primary Fuel	Auxiliary Fuel
N/A	N/A	N/A
Quantity of Fuel per Year (Specify Units: ex. ton, gal, cu.ft., etc.)		
Percent Sulfur Maximum Average		
Btu per Unit (Specify Unit in lb, ton, gal, etc.) Average		

STACK EMISSIONS

Air Contaminant *	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)	0.0007 lb/ton	7/30/97 Emissions Test	0.54
Particulate - PM ₁₀ (Filterable)	70% of Total PM	Assumed	0.38
Particulate - PM _{2.5} (Filterable)			
Particulate – CPM (Condensable)			
Sulfur Dioxide			
Nitrogen Oxides			
Carbon Monoxide			
Total Organic Compounds: Nonmethane			

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I declare under the penalties of perjury that this report has been examined by me and to the best of my knowledge is a true, correct and complete report.

Print Name of Person Submitting Report Kevin Thomas	Title Plant Environmental Superintendent	Telephone Number 7017947278
Signature/ 	Email Address kthomas@minnkota.com	Date 1/22/15

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SFN 8537 (06-14)

B/C

GENERAL

Name of Firm or Organization Minnkota Power Cooperative, Inc		Permit to Operate Number T5-F76009	Year of Emissions 2014	
Mailing Address PO Box 127		City Center	State ND	ZIP Code 58530
Facility Name Milton R. Young Station		Facility Location 3401 24th Street SW		Actual Hours of Operation 7996
Source Unit Description Unit 1 crusher house and conveyor 1C			Emission Unit Number M1	

RAW MATERIAL INFORMATION

Raw Materials Introduced into Process	Quantity (Specify Units)
Lignite Coal	1,545,188 tons

FUELS USED

Type (ex. lignite, natural gas, LPG No. 2 fuel oil, No. 6 fuel oil. etc.)	Primary Fuel	Auxiliary Fuel
N/A	N/A	N/A
Quantity of Fuel per Year (Specify Units: ex. ton, gal, cu.ft., etc.)		
Percent Sulfur Maximum Average		
Btu per Unit (Specify Unit in lb, ton, gal, etc.) Average		

STACK EMISSIONS

Air Contaminant *	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)	0.00055 lb/ton	8/7/97 Emissions Test	0.42
Particulate - PM ₁₀ (Filterable)	70% of Total PM	Assumed	0.30
Particulate - PM _{2.5} (Filterable)			
Particulate – CPM (Condensable)			
Sulfur Dioxide			
Nitrogen Oxides			
Carbon Monoxide			
Total Organic Compounds: Nonmethane			

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MINNKOTA POWER COOPERATIVE, INC.
MILTON R. YOUNG STATION
ANNUAL EMISSIONS INVENTORY REPORT

UNIT 1

Emission Factors

	Lignite (lb/10 ⁶ BTU)	Fuel Oil* (lb/1000gal)
Particulate****	0.0106	2.00
PM ₁₀ ****	0.0106	
PM _{2.5}	10% of Total	
Condensable PM**	0.0131 (lb/ton)	1.30
Crusher House**	0.00055	NA
Coal Silos**	0.0007	NA
Nonmethane Organic Compounds*	0.07	0.2
Hydrogen Chloride***	0.01	NA
Hydrogen Flouride***	0.01	NA
	(1b/10 ¹² BTU)	
Mercury****	3.128	
	(lb/hr)	
Ammonia**	2.06	

* Emission factors from AP-42

** Emission factor obtained from a performance stack test

*** Data obtained from testing conducted at Coal Creek

**** Emission factor derived from CEM data.

	Operating Data
Hours	7996
Lignite Heat Input (10 ⁶ BTU)****	19129722.5
Coal Combusted (tons)	1545188
Fuel Oil Combusted (gal)	274035

Unit 1 Stack

CEMS Data		(tons/yr)
	SO ₂	360.6
	NO _x	3194.7
	CO ₂	2082651.1
	CO	140.1

MINNKOTA POWER COOPERATIVE, INC.
MILTON R. YOUNG STATION
ANNUAL EMISSIONS INVENTORY REPORT

Particulate Emissions

PM		(tons/yr)
	Lignite	
	(0.0106 lb/10 ⁶ BTU) X (19129722.5 X 10 ⁶ BTU/yr) X (1 ton/2000 lb)	101.4
PM ₁₀	PM ₁₀ - Assumed to be 100% of PM	Total 101.4
PM _{2.5}	PM _{2.5} = 10% of PM**	Total 10.14
PMCON		(tons/yr)
	Lignite	
	(0.0131 lb/10 ⁶ BTU) X (19129722.5 X 10 ⁶ BTU/yr) X (1 ton/2000 lb)	125.30
	Fuel Oil	
	(1.3 lb/1000 gal) X (274035 gal/yr) x(1ton/2000 lb)	0.18
	Total PMCON	125.48
Mercury		(lb/yr)
	(3.128 lb/10 ¹² BTU)X(19129722.5 X 10 ⁶ BTU/yr) /1000000	59.8
Nonmethane		(tons/yr)
	Lignite	
	(0.07 lb/ton) X (1545188 tons/yr) X (1 ton/2000 lb)	54.08
	Fuel Oil	
	(0.2 lb/1000 gal) X (274035 gal/yr) x(1ton/2000 lb)	0.03
	Total NMOC	54.11
Hydrogen Chloride		(tons/yr)
	(0.01lb/ton) X (15745188 tons/yr) / (2000 lb/ton)	7.73
Hydrogen Flouride		(tons/yr)
	(0.01lb/ton) X (15745188 tons/yr) / (2000 lb/ton)	7.73
Ammonia	(2.06 lb/hr) X (7996 hrs) X (1 ton/2000 lbs)	(tons/yr) 8.24

MINNKOTA POWER COOPERATIVE, INC.
MILTON R. YOUNG STATION
ANNUAL EMISSIONS INVENTORY REPORT

Rotoclones
Crusher house

PM	Stack Test 8/7/97	(tons/yr)
	(0.00055 lb/ton) X (1545188 ton/yr) X (1 ton/2000 lb)	0.42
PM ₁₀	PM ₁₀ = 70% of PM**	Total 0.30

Coal Silos

PM	Stack Test 7/30/97	(tons/yr)
	(0.0007 lb/ton) X (1545188 ton/yr) X (1 ton/2000 lb)	0.54
PM ₁₀	PM ₁₀ = 70% of PM**	Total 0.38

Total Unit 1 PM₁₀ 102.06



FUEL BURNING EQUIPMENT USED FOR INDIRECT HEATING
ANNUAL EMISSION INVENTORY REPORT
 NORTH DAKOTA DEPARTMENT OF HEALTH
 DIVISION OF AIR QUALITY
 SFN 8536 (06-14)

GENERAL

Name of Firm or Organization Minnkota Power Cooperative, Inc		Permit to Operate Number T5-F76009	Year of Emissions 2014	
Mailing Address PO Box 127		City Center	State ND	ZIP Code 58530
Facility Name Milton R. Young Station		Facility Location 3401 24th Street SW		Emission Unit Number 2

EQUIPMENT INFORMATION

Manufacturer of Unit Babcock & Wilcox		Model Number RB-525	Max Heat Input (Btu/hr) 6300 Million	Gross Electricity Generated (MWh)* 3,016,384
Boiler Type: <input type="checkbox"/> Pulverized Tangential <input type="checkbox"/> Pulverized Wall Fired <input type="checkbox"/> Fluidized Bed <input checked="" type="checkbox"/> Cyclone <input type="checkbox"/> Stoker Type: _____ <input type="checkbox"/> Other: Specify: _____			Hours of Operation 6738	Net Electricity Generated (MWh)* 2,758,513

*Electric utility only.

FUELS USED

Type (ex. Lignite coal, Subbituminous coal, RDF, Natural gas, LPG, No. 2 oil, No. 6 oil. etc.)	Primary Fuel	Standby Fuel	Other Fuel
	Lignite		#2 Distillate Oil
Quantity of Fuel per Year (Specify Units: ex. ton, gal, cu.ft., etc.)	2,290,214 tons		234,476 gallons
Percent Ash (Coal Only) Average	8.81		
Percent Sulfur Maximum Average	0.93 max, 0.80 avg		<0.0015 %
Btu per Unit (Specify lb, ton, gal, etc.) Average	6688 Btu/lb		138020 Btu/gal
Percent Sodium in Coal Ash Average	6.99		

(The table below is used for single fuel combustion. Use the tables on the other side if multiple fuels are combusted and then summarize the total emissions per year in the "Tons" column below.)

TOTAL STACK EMISSIONS

Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)			191.0
Particulate – PM ₁₀ (Filterable)			191.0
Particulate – PM _{2.5} (Filterable)			19.1
Particulate – CPM (Condensable)			149.4
Sulfur Dioxide			1709.6
Nitrogen Oxides			4998.2
Carbon Monoxide			22.6
Total Organic Compounds: Nonmethane			80.2
Mercury***			180.0(lbs)
Ammonia***			4.2

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***Title V coal and oil-fired units only.

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Signature 	Email Address kthomas@minnkota.com	Date 1/22/15

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 918 E Divide, 2nd Floor
 Bismarck, ND 58501-1947
 Telephone: (701)328-5188

STACK EMISSIONS		Primary Fuel (Type): Lignite	Quality: 2,290,214 Tons
Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)	0.0128 lb/MMBtu	PMCEM Data	191.0
Particulate – PM ₁₀ (Filterable)	100% of Total PM	Assumed	191.0
Particulate – PM _{2.5} (Filterable)	10% of total	Assumed	19.1
Particulate – CPM (Condensable)	0.01 lb/MMBtu	10/3/2011 Emissions Test	149.2
Sulfur Dioxide	CEM Data	CEM Data	1709.6
Nitrogen Oxides	CEM Data	CEM Data	4998.2
Carbon Monoxide	CEM Data	CEM Data	22.6
Total Organic Compounds: Nonmethane	0.07 lb/ton	AP-42 Table 1.7-1	80.16
Mercury***	6.032 lb/TBtu	Hg CEM	180.0(lbs)
Ammonia***	1.24 lb/hr	10/3/2011 Emissions Test	4.18

STACK EMISSIONS		Standby Fuel (Type):	Quality:
Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)			
Particulate – PM ₁₀ (Filterable)			
Particulate – PM _{2.5} (Filterable)			
Particulate – CPM (Condensable)			
Sulfur Dioxide			
Nitrogen Oxides			
Carbon Monoxide			
Total Organic Compounds: Nonmethane			
Mercury***			
Ammonia***			

STACK EMISSIONS		Other Fuel (Type): #2 Distillate Oil	Quality: 234,476 gallons
Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total (Filterable)		Included in CEM data	
Particulate – PM ₁₀ (Filterable)		Included in CEM data	
Particulate – PM _{2.5} (Filterable)		Included in CEM data	
Particulate – CPM Condensable)	1.3 lb/1000 gal	AP-42 Table 1.3-2	0.15
Sulfur Dioxide		Included in CEM data	
Nitrogen Oxides		Included in CEM data	
Carbon Monoxide		Included in CEM data	
Total Organic Compounds: Nonmethane	0.2 lb/1000 gal	AP-42 Table 1.3-3	0.02
Other			

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ANNUAL EMISSION INVENTORY REPORT**
NORTH DAKOTA DEPARTMENT OF HEALTH
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SFN 8537 (06-14)

GENERAL

Name of Firm or Organization Minnkota Power Cooperative, Inc		Permit to Operate Number T5-F76009	Year of Emissions 2014	
Mailing Address PO Box 127		City Center	State ND	ZIP Code 58530
Facility Name Milton R. Young Station		Facility Location 3401 24th Street SW		Actual Hours of Operation 6738
Source Unit Description Unit 2 crusher house			Emission Unit Number M3	

RAW MATERIAL INFORMATION

Raw Materials Introduced into Process	Quantity (Specify Units)
Lignite Coal	2,290,214 tons

FUELS USED

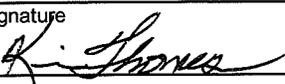
Type (ex. lignite, natural gas, LPG No. 2 fuel oil, No. 6 fuel oil. etc.)	Primary Fuel	Auxiliary Fuel
N/A	N/A	N/A
Quantity of Fuel per Year (Specify Units: ex. ton, gal, cu.ft., etc.)		
Percent Sulfur Maximum Average		
Btu per Unit (Specify Unit in lb, ton, gal, etc.) Average		

STACK EMISSIONS

Air Contaminant *	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)	0.0001 lb/ton	8/6/97 Emissions Test	0.11
Particulate - PM ₁₀ (Filterable)	70% of Total PM	Assumed	0.08
Particulate - PM _{2.5} (Filterable)			
Particulate – CPM (Condensable)			
Sulfur Dioxide			
Nitrogen Oxides			
Carbon Monoxide			
Total Organic Compounds: Nonmethane			

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Name of Firm or Organization Minnkota Power Cooperative, Inc		Permit to Operate Number T5-F76009	Year of Emissions 2014	
Mailing Address PO Box 127		City Center	State ND	ZIP Code 58530
Facility Name Milton R. Young Station	Facility Location 3401 24th Street SW		Actual Hours of Operation 6738	
Source Unit Description Unit 2 coal silos			Emission Unit Number M4	

RAW MATERIAL INFORMATION

Raw Materials Introduced into Process	Quantity (Specify Units)
Lignite Coal	2,290,214 tons

FUELS USED

Type (ex. lignite, natural gas, LPG No. 2 fuel oil, No. 6 fuel oil. etc.)	Primary Fuel	Auxiliary Fuel
N/A	N/A	N/A
Quantity of Fuel per Year (Specify Units: ex. ton, gal, cu.ft., etc.)		
Percent Sulfur Maximum Average		
Btu per Unit (Specify Unit in lb, ton, gal, etc.) Average		

STACK EMISSIONS

Air Contaminant *	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)	0.00164 lb/ton	7/31/97 Emissions Test	1.88
Particulate - PM ₁₀ (Filterable)	70% of Total PM	Assumed	1.31
Particulate - PM _{2.5} (Filterable)			
Particulate – CPM (Condensable)			
Sulfur Dioxide			
Nitrogen Oxides			
Carbon Monoxide			
Total Organic Compounds: Nonmethane			

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Name of Firm or Organization Minnkota Power Cooperative, Inc		Permit to Operate Number T5-F76009	Year of Emissions 2014	
Mailing Address PO Box 127		City Center	State ND	ZIP Code 58530
Facility Name Milton R. Young Station		Facility Location 3401 24th Street SW		Actual Hours of Operation 8760
Source Unit Description Lime Storage Silos			Emission Unit Number M7 & M13	

RAW MATERIAL INFORMATION

Raw Materials Introduced into Process	Quantity (Specify Units)
Lime	44,627 tons

FUELS USED

Type (ex. lignite, natural gas, LPG No. 2 fuel oil, No. 6 fuel oil. etc.)	Primary Fuel	Auxiliary Fuel
N/A	N/A	N/A
Quantity of Fuel per Year (Specify Units: ex. ton, gal, cu.ft., etc.)		
Percent Sulfur Maximum Average		
Btu per Unit (Specify Unit in lb, ton, gal, etc.) Average		

STACK EMISSIONS

Air Contaminant *	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)	0.000217 lb/ton	7/31/97 Emissions Test	0.005
Particulate - PM ₁₀ (Filterable)	70% of Total PM	Assumed	0.003
Particulate - PM _{2.5} (Filterable)			
Particulate – CPM (Condensable)			
Sulfur Dioxide			
Nitrogen Oxides			
Carbon Monoxide			
Total Organic Compounds: Nonmethane			

* Submit SFN 19839 for Hazardous Air Pollutants if applicable.

I declare under the penalties of perjury that this report has been examined by me and to the best of my knowledge is a true, correct and complete report.

Print Name of Person Submitting Report Kevin Thomas	Title Plant Environmental Superintendent	Telephone Number 7017947278
Signature 	Email Address kthomas@minnkota.com	Date 1/22/15

Return completed form to:
North Dakota Department of Health
Division of Air Quality
918 E Divide, 2nd Floor
Bismarck, ND 58501-1947
Telephone:(701)328-5188

MINNKOTA POWER COOPERATIVE, INC.
MILTON R. YOUNG STATION
ANNUAL EMISSIONS INVENTORY REPORT

UNIT 2

Emission Factors

	(lb/10 ⁶ BTU)	(lb/1000gal)
Particulate****	0.0128	
PM ₁₀ ****	0.0128	
PM _{2.5}	10% of Total	
Condensable PM**	0.01	1.30
	(lb\ton)	
Crusher House**	0.0001	NA
Coal Silos**	0.00164	NA
Nonmethane Organic Compounds	0.07	0.20
Lime Silo **	0.000217	
Hydrogen Chloride***	0.01	0.2
Hydrogen Flouride***	0.01	NA

	(1b/10 ¹² BTU)
Mercury****	6.032

	(lb/hr)
Ammonia**	1.24

* Emission factors from AP-42

** Emission factor obtained from a performance stack test

*** Data obtained from testing conducted at Coal Creek

**** Emission factor derived from CEM data.

Operating Data

Hours	6738
Lignite Heat Input (10 ⁶ BTU)****	29840050.9
Coal Combusted (tons)	2290214
Fuel Oil Combusted (gal)	234476
Lime Used (tons)	44627

Unit 2 Stack

CEMS Data		(tons/yr)
	SO ₂	1709.6
	NO _x	4998.2
	CO ₂	3248684
	CO	22.6

MINNKOTA POWER COOPERATIVE, INC.
MILTON R. YOUNG STATION
ANNUAL EMISSIONS INVENTORY REPORT

Particulate Emissions

PM		(tons/yr)
	Lignite (0.0128 lb/10 ⁶ BTU) X (29840050.9 X 10 ⁶ BTU/yr) X (1 ton/2000 lb)	190.98
PM ₁₀	PM ₁₀ - Assumed to be 100% of PM	Total 190.98
PM _{2.5}	PM _{2.5} = 10% of PM*	Total 19.10
PMCON		(tons/yr)
	Lignite (0.01 lb/10 ⁶ BTU) X (29840050.9 X 10 ⁶ BTU/yr) X (1 ton/2000 lb)	149.20
	Fuel Oil (1.3 lb/1000 gal) X (234476 gal/yr) x(1ton/2000 lb)	0.15
	Total PMCON	149.35
Mercury		(lb/yr)
	(6.032 lb/10 ¹² BTU)X(29840050.9 X 10 ⁶ BTU/yr) /1000000	180.0
Nonmethane		(tons/yr)
	Lignite (0.07 lb/ton) X (2290214 tons/yr) X (1 ton/2000 lb)	80.16
	(0.2 lb/1000 gal) X (234476 gal/yr) x(1ton/2000 lb)	0.02
	Total NMOC	80.18
Hydrogen Chloride		(tons/yr)
	(0.01lb/ton) X (2290214 tons/yr) X (2000 lb/ton)	11.45
Hydrogen Flouride		(tons/yr)
	(0.01lb/ton) X (2290214 tons/yr) X (2000 lb/ton)	11.45
Ammonia		(tons/yr)
	(1.24 lb/hr) X (6738 hrs) X (1 ton/2000 lbs)	4.18

MINNKOTA POWER COOPERATIVE, INC.
MILTON R. YOUNG STATION
ANNUAL EMISSIONS INVENTORY REPORT

Rotoclones

Crusher house

	Stack Test 8/6/97		(tons/yr)
PM	(0.0001 lb/ton) X (2290214 ton/yr) X (1 ton/2000 lb)		0.11
PM ₁₀	PM ₁₀ = 70% of PM*	Total	0.08

Coal Silos

	Stack Test 7/31/97		(tons/yr)
PM	(0.00164 lb/ton) X (2290214 ton/yr) X (1 ton/2000 lb)		1.88
PM ₁₀	PM ₁₀ = 70% of PM	Total	1.31

Lime Silo Baghouse

	Stack Test 7/31/97		
PM	(0.000217 lb/ton) X (44627 ton/yr)/2000		0.005
PM ₁₀	PM ₁₀ = 70% of PM	Total PM ₁₀	0.003

Total Unit 2 PM₁₀ 192.37



**FUEL BURNING EQUIPMENT USED FOR INDIRECT HEATING
ANNUAL EMISSION INVENTORY REPORT**
NORTH DAKOTA DEPARTMENT OF HEALTH
DIVISION OF AIR QUALITY
SFN 8536 (06-14)

GENERAL

Name of Firm or Organization Minnkota Power Cooperative, Inc		Permit to Operate Number T5-F76009	Year of Emissions 2014	
Mailing Address PO Box 127		City Center	State ND	ZIP Code 58530
Facility Name Milton R. Young Station		Facility Location 3401 24th Street SW		Emission Unit Number 3

EQUIPMENT INFORMATION

Manufacturer of Unit Cleaver Brooks		Model Number	Max Heat Input (Btu/hr) 78 Million	Gross Electricity Generated (MWh)*
Boiler Type: <input type="checkbox"/> Pulverized Tangential <input type="checkbox"/> Pulverized Wall Fired <input type="checkbox"/> Fluidized Bed <input type="checkbox"/> Cyclone <input type="checkbox"/> Stoker Type: _____ <input type="checkbox"/> Other: Specify: _____			Hours of Operation	Net Electricity Generated (MWh)*

*Electric utility only.

FUELS USED

Type	Primary Fuel	Standby Fuel	Other Fuel
(ex. Lignite coal, Subbituminous coal, RDF, Natural gas, LPG, No. 2 oil, No. 6 oil, etc.)	#2 Distillate Oil		
Quantity of Fuel per Year (Specify Units: ex. ton, gal, cu.ft., etc.)	150 gallons		
Percent Ash (Coal Only) Average			
Percent Sulfur Maximum Average	<0.0015 %		
Btu per Unit (Specify lb, ton, gal, etc.) Average	138020 Btu/gal		
Percent Sodium in Coal Ash Average			

(The table below is used for single fuel combustion. Use the tables on the other side if multiple fuels are combusted and then summarize the total emissions per year in the "Tons" column below.)

TOTAL STACK EMISSIONS

Air Contaminant **	Emission Factor (Include Units)	Emission Factor Source (Include Test Date if Applicable)	Tons
Particulate – Total PM (Filterable)	AP-42 Table 1.3-1	2 lb/1000 gal	<0.1
Particulate – PM ₁₀ (Filterable)		2 lb/1000 gal	<0.1
Particulate – PM _{2.5} (Filterable)		2 lb/1000 gal	<0.1
Particulate – CPM (Condensable)	AP-42 Table 1.3-2	1.3 lb/1000 gal	<0.1
Sulfur Dioxide	AP-42 Table 1.3-1	.21 lb/1000 gal	<0.1
Nitrogen Oxides	AP-42 Table 1.3-1	20 lb/1000 gal	<0.1
Carbon Monoxide	AP-42 Table 1.3-1	5 lb/1000 gal	<0.1
Total Organic Compounds: Nonmethane	AP-42 Table 1.3-3	0.2 lb/1000gal	<0.1
Mercury***			
Ammonia***			

**Submit SFN 19839 for Hazardous Air Pollutants if applicable.

***Title V coal and oil-fired units only.

I declare under the penalties of perjury that this report has been examined by me and to the best of my knowledge is a true, correct and complete report.

Print Name of Person Submitting Report Kevin Thomas	Title Plant Environmental Superintendent	Telephone Number 7017947278
Signature 	Email Address kthomas@minnkota.com	Date 1/22/15

Return completed form to:
North Dakota Department of Health
Division of Air Quality
918 E Divide, 2nd Floor
Bismarck, ND 58501-1947
Telephone: (701)328-5188



Milton R. Young Station • P.O. Box 127 • Center, ND 58530-0127 • Phone (701) 794-8711

January 22, 2015



Mr. Lew Dendy
North Dakota Department of Health
Division of Air Quality
918 East Divide Ave., 2nd floor
Bismarck, ND 58501-1947

RE: Annual Emission Inventory Report – Milton R. Young Station

Dear Mr. Dendy:

Enclosed is the annual emission inventory report (AEIR) for the Milton R. Young Station located near Center, North Dakota.

This report summarizes stack emissions utilizing EPA AP-42 emission factors, annual fuel usage, plant operations data, coal and fuel oil analysis, and actual CEMS measurements for the 2014 calendar year.

Please note the report includes the applicable filterable PM_{2.5}, condensable PM and Mercury emissions data. The additional Prevention of Significant Deterioration hourly data will be uploaded directly to the Department's FTP site.

No waste oil containing PCB's was combusted at the facility in 2014.

If you have any questions, feel free to contact Benjamin Gress at 701.794.7232.

Sincerely,

MINNKOTA POWER COOPERATIVE, INC.

Kevin Thomas, P.E.
Plant Environmental Superintendent

C: Gerry Pfau File: 101.004
John Graves w/enclosures
Craig Bleth w/enclosures