



Public Service Commission

State of North Dakota

COMMISSIONERS

Tony Clark, President
Susan E. Wefald
Kevin Cramer

Executive Secretary
Illona A. Jeffcoat-Sacco

600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
web: www.psc.state.nd.us
e-mail: ndpsc@state.nd.us
TDD 800-366-6888
Fax 701-328-2410
Phone 701-328-2400

September 23, 2005

Mr. Ted Anderson
Upper Great Plains Customer Service Region
Western Area Power Administration
P.O. Box 35800
Billings, MT 59107-5800

Re: Burleigh County Wind Energy Center

Dear Mr. Anderson:

I appreciated the opportunity to visit with you over the telephone this morning regarding the environmental assessment for Basin Electric Power Cooperative's application to interconnect the Burleigh County Wind Energy Center near Wilton, North Dakota. Enclosed are copies of the letters we discussed regarding possible abandoned underground mines in the project area and turbine placement.

If you have questions, or if I can be of any assistance in the future, please let me know. My direct telephone number is 701 328-1035.

Sincerely

Jerry Lein
Public Utilities Analyst

Enc. June 27, 2005 letters regarding underground mines
July 27, 2005 letter from the Wind Energy Council



Public Service Commission
State of North Dakota

PU-05-205

COMMISSIONERS

Tony Clark, President
Susan E. Wefald
Kevin Cramer

Executive Secretary
Illona A. Jeffcoat-Sacco

600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
web: www.psc.state.nd.us
e-mail: ndpsc@state.nd.us
TDD 800-366-6888
Fax 701-328-2410
Phone 701-328-2400

June 27, 2005

John DiDonato
Project Director
FPL Energy
700 Universe Boulevard
Juno Beach, FL 33408-2683

Dear Mr. DiDonato:

Reference our phone conversation of 27 June 2005.

I have been informed that you have plans to construct a wind farm in several sections of Burleigh County, North Dakota.

We have historical records on two small underground mining operations in two sections within your wind farm development area. I have enclosed the information we have.

If you have any questions, please feel free to contact me at 701-328-4096.

Sincerely,

A handwritten signature in cursive script that reads "Lou Ogaard".

Lou Ogaard, Director
AML Division



Public Service Commission

State of North Dakota

COMMISSIONERS

Tony Clark, President
Susan E. Wefald
Kevin Cramer

Executive Secretary
Hilona A. Jeffcoat-Sacco

600 E. Boulevard Ave. Dept 408
Bismarck, North Dakota 58505-0480
web: www.psc.state.nd.us
e-mail: ndpsc@state.nd.us
TDD 800-366-6888
Fax 701-328-2410
Phone 701-328-2400

June 27, 2005

Brian Bjella
Fleck, Mather & Strutz, LTD
PO Box 2798
Bismarck, ND 58502

Dear Mr. Bjella:

My name is Lou Ogaard, and I administer the abandoned mine lands division of the North Dakota Public Service Commission (Commission). I have been informed that you have plans to construct a wind farm in several sections of Burleigh County, North Dakota.

We have historical records on two small underground mining operations in two sections within your wind farm development area. I have enclosed the information we have.

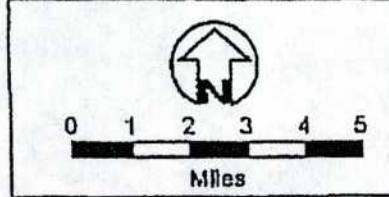
If you have any questions, please feel free to contact me at 701-328-4096.

Sincerely,

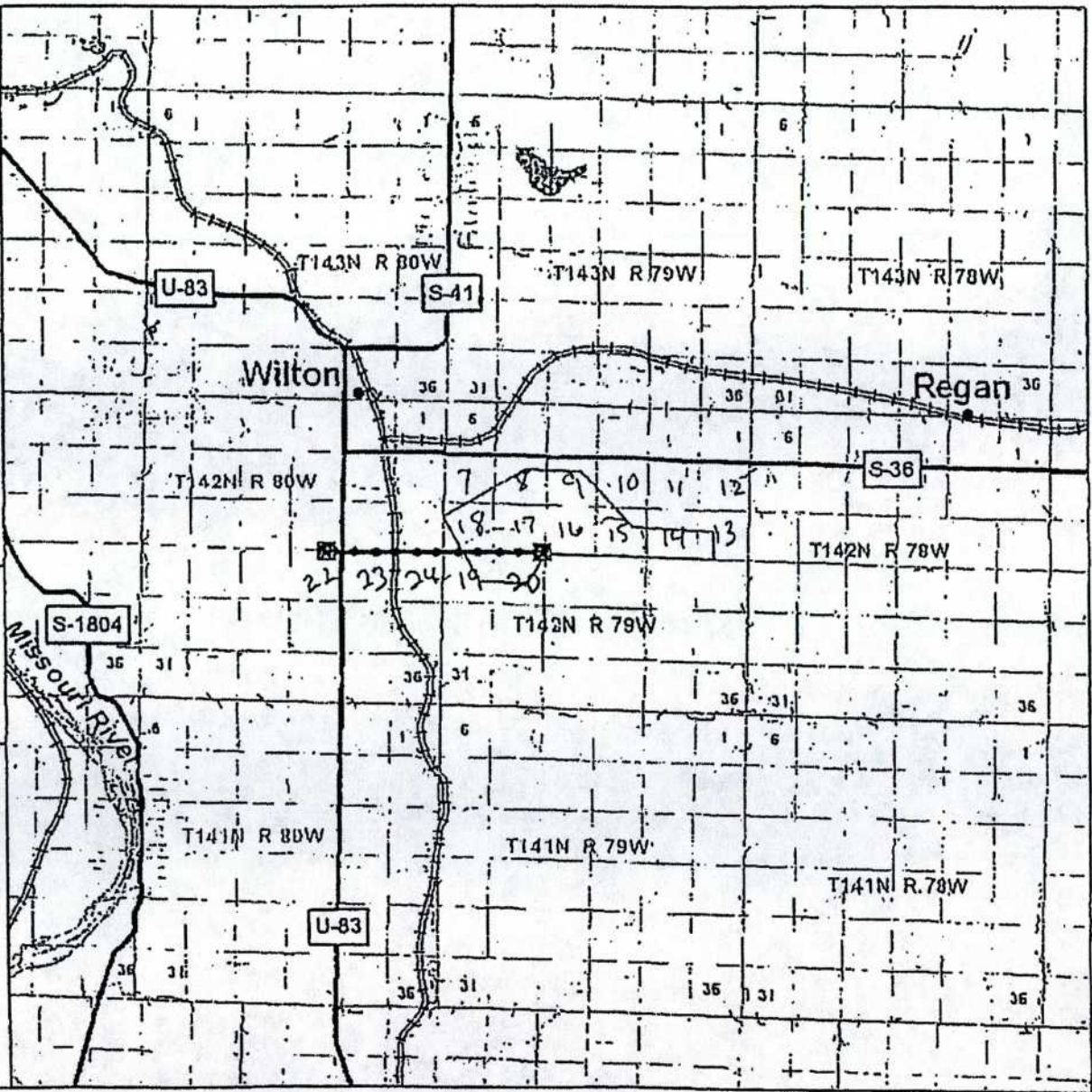
Lou Ogaard, Director
AML Division



Proposed Facilities Including Turbine Array, Substations, and Transmission Route to Point of Western Area Power Administration Interconnect



- New Substations
- New Transmission Line
- Wind Energy Center
- Cities and Towns
- Highways
- Townships
- Sections



BURLEIGH COUNTY

Planning Unit 106: AML Printout #263: T142N, R79W, Section 10, SW

Additional Legal Location: None

Name:

Owner:

Asplund Coal Co.

H.C. Asplund

Category: Commercial/local

Type: Underground, slope

Overburden:	Coal Seam:	Thickness Mined:	Source:
No data	10 ft.	No data	Harrington:1934a

Cultural Resource Site Number: Not formally recorded

Basic Data (excerpted from primary sources):

The Asplund Coal Co. is listed as a new mine in 1931, and it likely began operations in about that year. Although the mine shipped coal in 1934, 1935, 1936, 1937, and 1938, amounts shipped were very small and the mine primarily served a local trade. The mine is listed as not operating in 1943, and since no further listings were noted for the mine, it is assumed that the mine ceased operations at about that time; however, it is possible that the mine continued to be operated but not reported or that the mine was operated and reported under some other name following 1943.

Descriptive information pertaining to this mine is included in:

[source:year(pages)]

WCB Map:1937

Notes:

None

Sources (primary and secondary):

CMID:see table, next page, for appropriate years
Harrington:1934a(3)
WCB:1937

Burleigh-9

Mine: Asplund Coal Co.

Planning Unit: 106

AML Number: 263

Year	Days Operated	Employees	Price Per Ton	Tons Produced	Tons Local Trade	Tons Shipped	Owner or Superintendent*
1931	90	3	1.85	263	263	none	H.C. Asplund**
1932	300	6	1.50	1,973	1,973	none	H.C. Asplund**
1933	200	7	1.50	2,041	2,041	none	H.C. Asplund**
1934	200	6	1.50	2,640	2,040	600	Helmer Asplund**
1935	200	7	1.50	2,500	2,000	500	H.C. Asplund**
1936	180	5	1.50	1,800	1,600	200	H.C. Asplund**
1937	200	6	1.50	1,900	1,860	40	H.C. Asplund**
1938	168	7	1.65	2,514	2,494	20	H.C. Asplund**
1939	165	7	1.65	2,703	2,703	none	H.C. Asplund**
1940	200	7	1.50	2,695	2,695	none	H.C. Asplund**
1941	169	6	1.65	1,829	1,829	none	H.C. Asplund**
1942	200	5	1.75+	1,428	1,428	none	H.C. Asplund**

*Unless otherwise indicated, name listed is that of owner.

**Individual was superintendent of the mine; owner not listed.

Burleigh-10

BURLEIGH COUNTY

Planning Unit 106: AML Printout #261: T142N, R79W, Section 15, NW

Additional Legal Location: None

Name:

Owner:

Engstrom Coal Mine

Herman Engstrom

Category: Commercial/local

Type: Underground, slope, single entry

Overburden:	Coal Seam:	Thickness Mined:	Source:
50 ft.	11 ft.	7 ft.	CMID:1926

Cultural Resource Site Number: Not formally recorded

Basic Data (excerpted from primary sources):

This mine is not listed as a new mine in 1923, and it is possible that the mine was in operation prior to that time. A new operator is listed for this mine in 1936; it is not known whether or not the mine owner changed at this time as well. The mine is listed as not operating in 1938, and it is listed as a new mine in 1940. It is not known if the location of the new mine was different than that of the original Engstrom mine; however, since the "new mine" also is a slope mine, it is possible that a new entrance was dug to the old mine. The last listing noted for this mine was in 1950, and it is likely that the mine ceased operation at about that time.

Descriptive information pertaining to this mine is included in:

[source:year(pages)]

CMID:1926(20)

WCB Map:1923

Notes:

None

Sources (primary and secondary):

Brant:1953(25)

CMID:see table, next page, for appropriate years

Harrington:1934a(3)

WCB:1923

Burleigh-14

Mine: Engstrom Coal Mine

Planning Unit: 106
 AML Number: 261

Year	Days Operated	Employees	Price Per Ton	Tons Produced	Tons Local Trade	Tons Shipped	Owner or Superintendent*
1923	30	5	2.00	164	79	85	H. Engstrom**
1924	90	4	2.30	749	449	300	Herman Engstrom**
1925	196	5	2.40	736	736	none	H. Engstrom**
1926	120	4	2.30	1,050	1,050	none	H. Engstrom**
1927	98	4	2.00	716	716	none	H. Engstrom**
1928	182	4	2.00	874	874	none	Herman Engstrom**
1929	240	7	2.00	1,487	1,487	none	Mr. Danielson**
1930	211	7	1.75	1,406	1,406	none	Fred Danielson**
1931	180	5	2.00	1,177	1,177	none	H. Engstrom**
1932	80	5	1.75	930	930	none	H. Engstrom**
1933	150	5	1.50	2,013	2,013	none	H. Engstrom**
1934	129	9	1.50	2,078	1,278	800	H. Engstrom**
1935	no data	9	1.50	3,372	2,272	1,100	Melvin Backman**
1936	no data	no data	no data	no data	no data	no data	no data
1936	"new operator"						
1937	no data	no data	1.50	912	912	none	David Carlson**
1938	120	no data	1.65	800	800	none	Carlson, Bucholz, Soderquist & Johnson**
1938	"not operating"						
1939	no report						
1940	no data	no data	no data	no data	no data	no data	no data
1940	"new mine"						
1941	184	3	1.65	304	304	none	Adolph Engstrom**
1942	250	4	1.75	902	902	none	Adolph Engstrom**
1943	140	1	1.94	416	416	none	Adolph Engstrom**
1944		6	2.25	1,660	106	1,650	Alf. E. Johnson**
1945	95	2	2.50	993	993	none	Alf E. Johnson**
1947	127	4	3.00	1,967	1,945	none	Ralph Taplin**
1948	180	3	3.20	618	618	none	Adolph Engstrom**
1949	200	4	3.20	1,258	1,258	none	Adolph Engstrom**
1950	180	3	3.35	510	510	none	Adolph Engstrom**

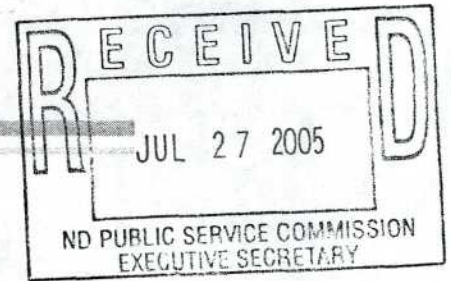
*Unless otherwise indicated, name listed is that of owner.

**Individual was superintendent of the mine; owner not listed.

Burleigh-15

Wind Energy Council

Growing the wind energy industry in the Upper Great Plains



July 27, 2005

North Dakota Public Service Commissioners
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

Dear Commissioners Clark, Cramer & Wefald,

Wind energy development in North Dakota is gaining momentum with 67 megawatts of existing wind energy generation and more than 300 MW of new wind energy generation under development in five new wind farm projects.

The positive attributes of wind energy have attracted a large and diverse group of stakeholders with differing opinions on what is best for the future development of wind in North Dakota. This has resulted at times in mixed signals being sent to Legislators, State Officials and decision-makers regarding wind energy issues.

The recent action taken by Spring Valley Township in Dickey County has brought the wind farm siting issue back to the forefront of public policy debate in North Dakota. At the center of the debate is the issue of mandatory set-backs from a wind farm perimeter. The main concern is the protection of adjacent landowner wind resources.

Background

In the design of a wind farm, it is important to pay attention to the arrangement and spacing of the wind turbines relative to the prevailing winds. The reason is that the turbulence (wake effect) from an upwind turbine can have a negative effect on the energy production of wind turbines that are down wind. As the wind turbines are spaced farther apart, the wind has a chance to straighten back out before it reaches the next turbine, which minimizes the wake effects.

Some states have established mandatory spacing requirements that control the minimum distance (setback) that a wind turbine must be placed from the perimeter of the wind farm. From an engineering point of view, the wind must travel a distance equal to approximately 10 wind turbine rotor diameters (RD's) in order to straighten out and have the same energy potential that it did when it passed through the first wind turbine's rotor. For this reason, Minnesota requires a minimum setback of 5 RD's. That way, if two adjoining wind farms each maintain the 5 RD's, the wind turbines from the two projects will have a total separation distance equal to 10 RD's, preserving each wind farm owner's wind resource.

The underlying assumptions behind the mandatory setback are that the wind turbines are aligned with the prevailing winds and that the adjacent property is suitable for wind development, which may or may not be the case.

23 PU-05-47 ✓

Pages: 3

Letter to Commission re wind energy
generation
by Wind Energy Council

07/27/2005 c: Comm. Legal Illona, Jerry, Annette ALJ .

21 PU-05-305

Pages: 3

Letter to Commission re wind energy
generation
by Wind Energy Council

07/27/2005 c: Comm. Legal Illona, Jerry, Annette ALJ .

Wind Energy Council Recommendations

The Wind Energy Council would like to offer the following recommendations for consideration regarding the wind farm siting issues in North Dakota.

It would be best to implement a uniform set of wind farm siting criteria at the state level and WEC would welcome the opportunity to participate in a constructive dialogue to discuss the issues.

- o Having different siting criteria from County to County or Township to Township will make it more complicated and potentially more costly to develop projects.
- o It would be best to appoint one agency to administer and enforce the siting regulations, so that requests for variances are handled in a consistent and impartial manner.

If not implemented properly, mandatory setbacks from a wind farm perimeter will have a negative impact on wind development in North Dakota.

- o Arbitrarily requiring wind farms to maintain a 5 RD setback along the wind farm perimeter will eliminate some good potential land parcels from wind development unless an agency or person has the authority to exercise judgment and grant variances.
- o Wind farms are typically developed on prominent land features such as hills and ridgelines. In many cases, the adjacent land is not suitable for wind energy development because it is not on the high ground.
- o The quality of the wind resource is critical to the revenue of the wind farm. It is in every wind farm owner's best interest to protect their wind resource by entering into agreements with adjacent landowners to ensure that another wind farm or other tall structure that would interfere with the wind resource is not built too close to the wind turbines.

Over the last two years, the Wind Energy Council has organized and conducted a series of meetings that were attended by a broad range of individuals, landowners, communities, organizations, and companies that consider themselves to be stakeholders in North Dakota's wind energy future. The primary purpose for the meetings was to achieve consensus on what the important issues are and what legislation may be needed to further promote wind development and ensure that North Dakota's landowners and citizens are treated fairly.

From these meetings, a set of draft minimum guidelines were created for the siting of wind turbines. While not a comprehensive list, it represents the items upon which consensus was reached. Consensus was not reached on the issue of mandatory setbacks. The group felt that it would be best for everyone if these guidelines were implemented uniformly across the state. However, the best way to achieve this remained subject to debate. The group decided to reach out to the County Commissioners and make the guidelines available to any Commissioners that had an interest, rather than approaching the State Legislature. For your reference, a copy of the draft guidelines is attached to this letter.

Thank you for your consideration in these matters. Resolving the issues surrounding siting wind turbines is clearly in the best interest of the State and the wind industry so that robust wind development can occur as efficiently as possible. I would be happy to address any questions.

Respectfully submitted,



Jay Haley, Chairman
Wind Energy Council

DRAFT

ND Wind Energy Stakeholders Coalition

Recommended Minimum Guidelines For the Siting of Wind Turbines

July 25, 2005

Setbacks

- Public Roads – 1.1 x overall height to tip of blade at highest point
- Occupied Residence – 500 ft
- Icing – 1.5 x (hub height + rotor diameter)

Towers

- Tubular towers only, no lattice style
- Non-reflective paint/coatings on tower, nacelle, and blades

Collection System

- No overhead lines within wind farm perimeter

Lighting

- Minimum lighting of turbines as per FAA requirements
- No additional lighting on turbines.