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June 2, 2009

PUBLIC SERVICE COMMISSION

Mr. Darrell Nitschke
Executive Secretary
Director of Administration
North Dakota Public Service Commission
600 East Boulevard, Dept 408
Bismarck, ND 58505-0408

*Via E-Filing to ndpsc@nd.gov
and UPS Overnight Mail*

RE: Otter Tail Corporation 40.5 MW Otter Tail Project, Cavalier County

Dear Executive Secretary Nitschke:

Enclosed in the above-referenced matter are an original and seven (7) copies of a Decommissioning Plan and Cost Estimates.

This 40.5 MW portion of the Langdon Wind Energy Center was the subject of an Otter Tail Application for a Certificate of Public Convenience and Necessity in PU-07-607.

Thank you for your attention to this matter.

Sincerely,

Mark B. Bring
Associate General Counsel
/cjk

Enclosures

17 **PU-07-607** Filed: 6/2/2009 Pages: 7
Decommissioning Plan and Cost Estimates

Otter Tail Corporation
Mark Bring, Associate Gnl. Counsel

1 **PU-09-244** Filed: 6/2/2009 Pages: 7
Decommissioning Plan and Cost Estimates

Otter Tail Corporation
Mark Bring, Associate Gnl. Counsel

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

**Otter Tail Corporation
Otter Tail 40.5 MW Project – Wind**

Case No. _____

DECOMMISSIONING PLAN

Pursuant to ND Administrative Code § 69-09-09-06 and § 69-09-09-07, please accept this filing as Otter Tail Power Company's proposed decommissioning plan for the 40.5 MW owned by Otter Tail Power Company at the Langdon Wind Energy Center. The decommissioning plan contains two scenarios, one which recoups the salvage value of the components and the other scenario under which decommissioning costs are based upon scrapping the components (except for the transformers).

Salvage and Resale Value. The resale value of a wind turbine refers to the potential salvage value at the end of its useful life. Future resale value will depend upon a variety of factors, including the extent of changes in the design of new systems, and upon the attractiveness of wind turbines relative to other alternative energy technologies. The salvage value of the wind energy system increases the ultimate rate of return on the investment. A conservative estimate for salvage value was used in the calculation of a selling price after 20 years, determining the wind turbines to be worth 10 percent of their original purchase price.

Decommission Activities. The costs and activities for the removal of the tower and wind turbine components, the meteorological tower, access roads, and the collection system have been evaluated, as follows:

Tower and Wind Turbine Components. The turbines are GE 1.5 MW on 80 meter steel towers. Activities have been estimated for dismantling the GE turbines, the tower sections and wind turbine blades. Removal of the tower wiring and transformer is also included. All components would be removed from the property. The salvage value for the tower, transformer and turbine is estimated to be 10 percent of their estimated value. (As indicated above, a conservative value has been used.)

Tower and Transformer Foundations. Tower and transformer foundations would be removed to a depth of three (3) feet below existing grade. Conduits and connections would be removed to a depth of two (2) feet below grade. The foundation sites would be graded to match surrounding contours and be restored to conditions that will support surrounding vegetation.

Other Structures. One meteorological tower would be removed, including its footing to a depth of three (3) feet below existing grade.

Tower Access Roads. Aggregate base roads would be scarified and graded into the adjacent soils to the approximate existing topography. This area would be covered with topsoil from the site and vegetation re-established.

Collection System. The collection system terminations near the transformer would be removed to a depth of two (2) feet below existing ground line. The collection system cabling is assumed to be left in place since the depth of installation is below the two (2) foot depth as per industry norms.

Disturbed areas would be restored and reclaimed to the same general topography existing just prior to commencing construction of the Langdon Wind Energy Center. Topsoil will be spread over the disturbed area at a depth similar to that in existence prior to the disturbance. The disturbed areas would be graded, top-soiled and reseeded according to National Resource Conservation Service guidelines, unless the landowner requests, in writing, that the access roads or other land surface areas be retained.

Within eight (8) months after the facility or turbine reaches the end of its useful life (after no electricity generation for a continuing period of 24 months), decommissioning shall begin and will be completed within eighteen (18) months after the facility or turbine reaches the end of its useful life.

The cost of the decommissioning would be paid for using funds obtained from internally generated cash flows.

If ordered by the North Dakota Public Service Commission, after the tenth (10th) year of operation, the owner/operator will secure a performance or surety bond, letter of credit, corporate guarantee, or other form of financial assurance acceptable to the Commission to cover the anticipated costs of decommissioning.

As indicated on the attached estimates, the total cost of salvage and restoration is estimated to be \$17,490.00, and the total estimated cost if the components are scrapped is \$857,042.00.

If you have any questions or need additional clarification, please contact me.

Respectfully submitted,

OTTER TAIL POWER COMPANY



Randy Synsteliën
Manager, Renewable Energy
Development

**Project: 40.5 MW of Langdon Wind Energy Center
Wind Tower Decommission and Site Restoration Estimate (Scrap Value)**

1.0 Turbines and Towers: Decommissioning turbines and towers for this estimate assumes no commercial or resale value for both the turbines and towers. Scrap practices will be performed in a manner consistent with demolition practices. Transformers will be salvaged.

Turbines - GE 1.5 MW; Towers - 80M Steel Towers

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u>
1.1 Demolish Turbine & Towers	27 ea	\$ 20,800.00	\$ 561,600.00	Removal of electrical tower wiring included & scrapping of tower/turbines on-site.
1.2 Removal of Transformers	27 ea	\$ 1,196.00	\$ 32,292.00	
1.3 Removal of Turbine Blades	27 ea	\$ 5,720.00	\$ 154,400.00	Removal due to fiberglass clean-up with disposal in an off-site facility. Scrap value @ \$36.40/ton based upon a 349,212# tower.
1.4 Scrap Value of Towers	27 ea	\$ (6,344.00)	\$ (171,288.00)	
1.5 Salvage Value of Transformers	27 ea	\$ (4,160.00)	\$ (112,320.00)	
1.6 Scrap Value of Turbine	27 ea	\$ (9,360.00)	\$ (252,720.00)	
1.0 Turbine and Tower Totals:			\$ 211,964.00	

2.0 Tower Foundations: Tower foundations will be removed to a depth of three (3) feet below existing grade. Transformer foundations will be removed to three (3) feet below grade. Conduits and connections will be removed to a depth of two (2) feet below grade. Foundation sites will be graded to match surrounding contours and restored to conditions that will support surrounding vegetation.

Type: Spread Footing with Pedestal

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u>
2.1 Foundation Removal, Disposal & Grading	27 ea	\$15,500.00	\$ 418,500.00	Demolition & removal of foundation concrete & steel Complete removal
2.2 Transformer Pad Removal & Disposal	27 ea	\$ 260.00	\$ 7,020.00	
2.0 Tower Foundation Totals:			\$ 425,520.00	

3.0 Other Structures: Removal of meteorological tower, including footing to a depth of three (3) feet below existing grade.

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u>
3.1 80 meter Meteorological Towers	1 ea	\$ 7,800.00	\$ 7,800.00	
3.2 Substation Foundations, Fence, Steel & Grading	0 ea	\$ --	\$ --	
3.3 Substation Equipment Salvage	0 ea	\$ --	\$ --	
3.4 O&M Building Salvage, Fence Removal & Grading	1 ea	\$15,600.00	\$ 15,600.00	
3.0 Other Structure Totals:			\$ 23,400.00	

4.0 Tower Access and Site Roads: Aggregate base roads will be scarified and graded into the adjacent soils to approximate existing topography, covered with topsoil from the site and vegetation re-established.

Type: 14,502 lf of average 16 ft wide roads with 6 inches of compacted aggregate base

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u>
4.1 Roadway Obliteration	47,266 lf	\$ 2.96	\$ 139,907.00	Aggregate base can be mixed and covered with topsoil
4.2 Topsoil Re-spread	36.50 ac	\$ 286.00	\$ 10,439.00	
4.3 Re-vegetation Seeding	36.50 ac	\$ 832.00	\$ 30,368.00	
4.0 Tower Access & Site Roads:			\$ 180,714.00	

5.0 Collection System: Removal of termination sections near transformer to a depth of 24" below existing ground line.

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u>
5.1 Remove collection system terminations	27 ea	\$ 572.00	\$ 15,444.00	
5.0 Collection System Totals:			<u>\$ 15,444.00</u>	
Langdon Site Decommission Totals:			\$ 857,042.00	

**Project: 40.5 MW of Langdon Wind Energy Center
Wind Tower Decommission and Site Restoration Estimate (Salvage Value)**

1.0 Turbines and Towers: Decommissioning turbines and towers for this estimate assumes a commercial or resale value of both the turbines and towers. Salvage will be performed in a manner consistent with material salvaging practices.

Turbines - GE 1.5 MW; Towers - 80M Steel Towers

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u> Removal of electrical tower wiring included & hauling of tower turbines off-site (\$93.6k).
1.1 Dismantle Turbine & Towers	27 ea	\$ 124,800.00	\$ 3,369,600.00	
1.2 Removal of Transformers	27 ea	\$ 1,196.00	\$ 32,292.00	
1.3 Removal of Turbine Blades	27 ea	\$ 5,720.00	\$ 154,440.00	
1.4 Salvage Value of Towers	27 ea	\$ (20,800.00)	\$ (561,600.00)	Removal & disposal of bolts included
1.5 Salvage Value of Transformers	27 ea	\$ (4,160.00)	\$ (112,320.00)	
1.6 Salvage Value of Turbine	27 ea	\$(130,000.00)	<u>\$(3,510,000.00)</u>	
1.0 Turbine and Tower Totals:			\$ (627,588.00)	

2.0 Tower Foundations: Tower foundations will be removed to a depth of three (3) feet below existing grade. Transformer foundations will be removed to three (3) feet below grade. Conduits and connections will be removed to a depth of three (3) feet below grade. Foundation sites will be graded to match surrounding contours and restored to conditions that will support surrounding vegetation.

Type: Spread Footing with Pedestal

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u> Demolition & removal of foundation concrete & steel
2.1 Foundation Removal, Disposal & Grading	27 ea	\$15,500.00	\$ 418,500.00	
2.2 Transformer Pad Removal & Disposal	27 ea	\$ 260.00	<u>\$ 7,020.00</u>	Complete removal
2.0 Tower Foundation Totals:			\$ 425,520.00	

3.0 Other Structures: Removal of meteorological tower, including footing to a depth of three (3) feet below existing grade.

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u>
3.1 80 meter Meteorological Towers	1 ea	\$ 7,800.00	\$ 7,800.00	
3.2 Substation Foundations, Fence, Steel & Grading	0 ea	\$ --	\$ --	
3.3 Substation Equipment Salvage	0 ea	\$ --	\$ --	
3.4 O&M Building Salvage, Fence Removal & Grading	1 ea	\$15,600.00	<u>\$ 15,600.00</u>	
3.0 Other Structure Totals:			\$ 23,400.00	

4.0 Tower Access and Site Roads: Aggregate base roads will be scarified and graded into the adjacent soils to approximate existing topography, covered with topsoil from the site and vegetation re-established.

Type: 14,502 lf of average 16 ft wide roads with 6 inches of compacted aggregate base

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u> Aggregate base can be mixed and covered with topsoil
4.1 Roadway Obliteration	47,266 lf	\$ 2.96	\$ 139,907.00	
4.2 Topsoil Re-spread	36.50 ac	\$ 286.00	\$ 10,439.00	
4.3 Re-vegetation Seeding	36.50 ac	\$ 832.00	<u>\$ 30,368.00</u>	
4.0 Tower Access & Site Roads:			\$ 180,714.00	

5.0 Collection System: Removal of termination sections near transformer to a depth of 24" below existing ground line.

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Assumptions:</u>
5.1 Remove collection system Terminations	27 ea	\$ 572.00	\$ 15,444.00	
5.0 Collection System Totals:			<u>\$ 15,444.00</u>	
Langdon Site Decommission Totals:			\$ 17,490.00	