

April 26, 2023

VIA E-MAIL AND HAND DELIVERY

Mr. Steven Kahl
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480


**Re: Otter Tail Power Company
Langdon Wind Energy Center Upgrade Project
Siting Application – Cavalier County
Case No. PU-23-86**

Dear Mr. Kahl:

In connection with the above-referenced matter, Otter Tail Power Company encloses for filing an electronic copy of its presentation for the April 27, 2023 informal hearing. We will bring hard copies of the presentation to the informal hearing tomorrow.

If you have any questions, please let me know.

Sincerely,



MOLLIE M. SMITH

MMS/78980798
Enclosure

cc: Lisa McFarland (w/ enclosure, via e-mail)
Bryce Haugen (w/ enclosure, via e-mail)



INFORMAL HEARING CASE NO. PU-23-086

Langdon Wind Energy Center Upgrade

April 27, 2023



SUMMARY OF REQUEST

Filing Request of the Commission:

- Certification of the Langdon Wind Equipment Upgrade, supported by:
 - Environmental and regulatory compliance memorandum and variance request, with:
 - Figures 1-3 reflecting 97m rotor diameter
 - Appendix A - Acoustic Assessment Results and Sound Waivers
 - Appendix B - Shadow Flicker Assessment Results
 - Appendix C - Determinations of No Hazard
 - Appendix D - Microwave Beam Path Analysis
 - Appendix E - Cultural Resource Report
 - Appendix F - Unanticipated Discoveries Plan
 - Appendix G - IPaC Resource List
 - Appendix H - Agency Correspondence
 - Supplemental Filing (potential turbine specification modifications)
 - Letter confirming no change to generation interconnect nor any change in MW delivered to the grid
 - Updated Figures 1-3 reflecting 91m rotor diameter
 - Letter from sound and shadow study engineer
- Amendment Request
 - Removal of the MW limitation in prior Order and Certificate of Site Compatibility



EQUIPMENT UPGRADES DESCRIBED

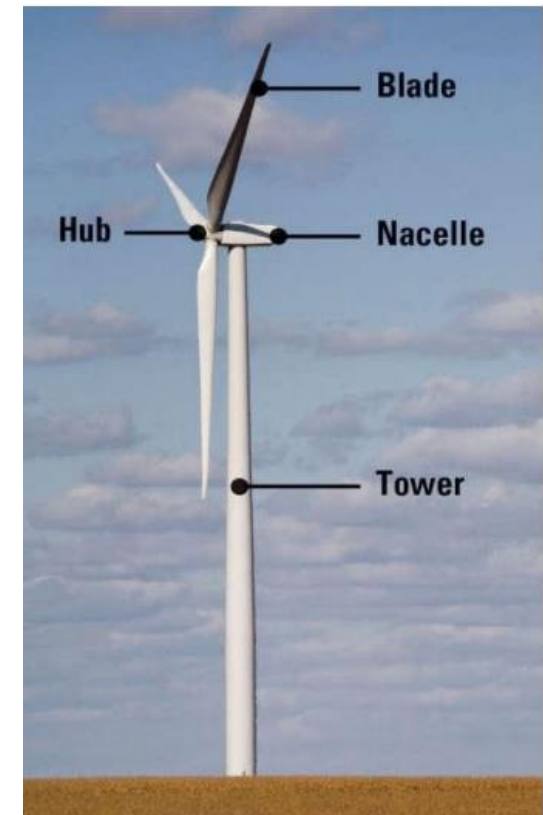
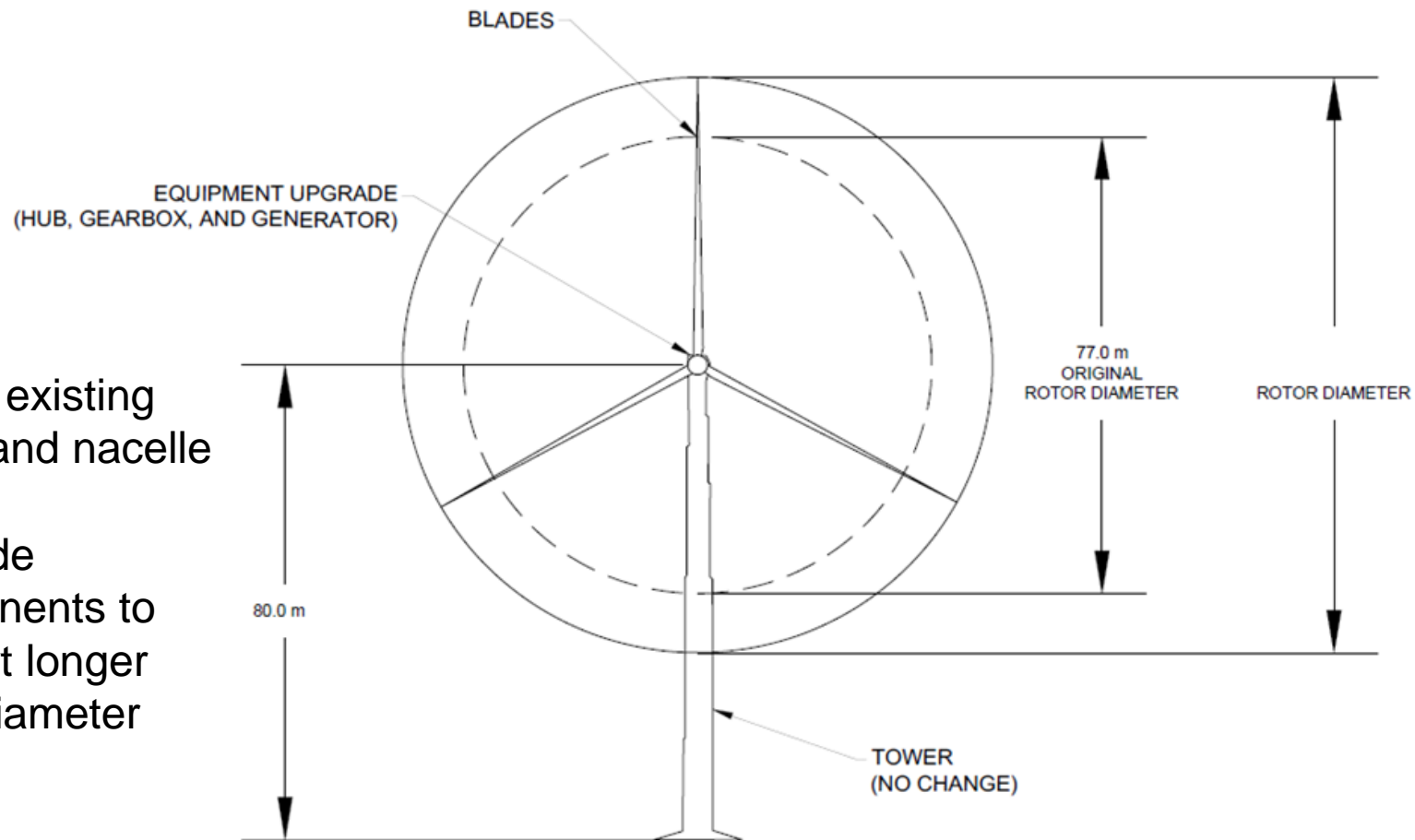
- Wind turbines are improved through use of existing towers and nacelles by replacing or refurbishing components to support longer blades to maximize energy generation at the existing facility.
- Langdon project:
 - Component replacement target Q3 2024
 - Existing towers and foundations remain
 - No changes to underground collection, substation
 - New hub and rotors to support longer blades
 - 77 meter rotor diameter increases up to 97 meter rotor diameter
 - Component, electrical, and software upgrades within nacelle



FIGURE 2

PROPOSED TURBINE UPGRADE

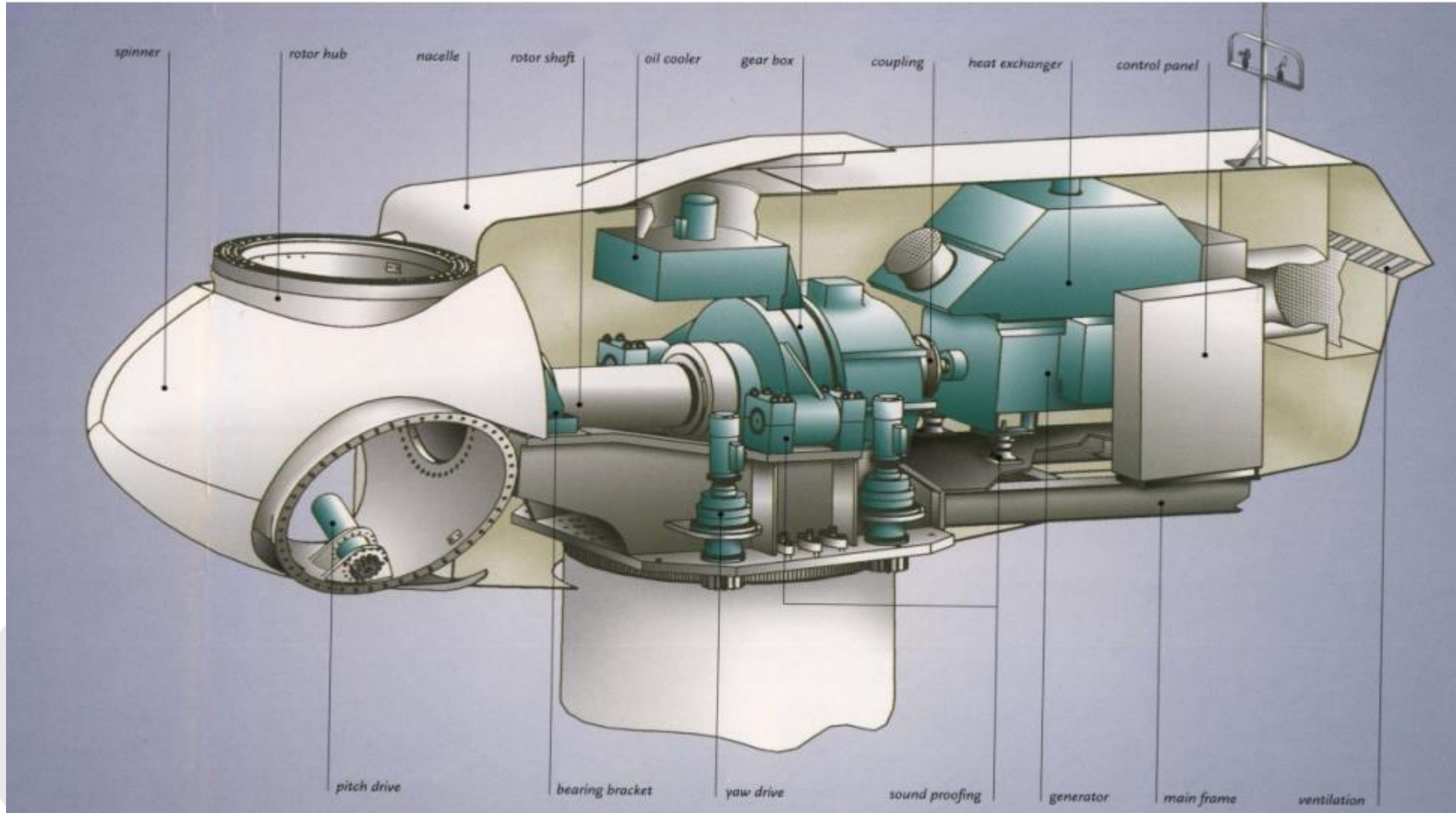
- ~20% more energy generated annually



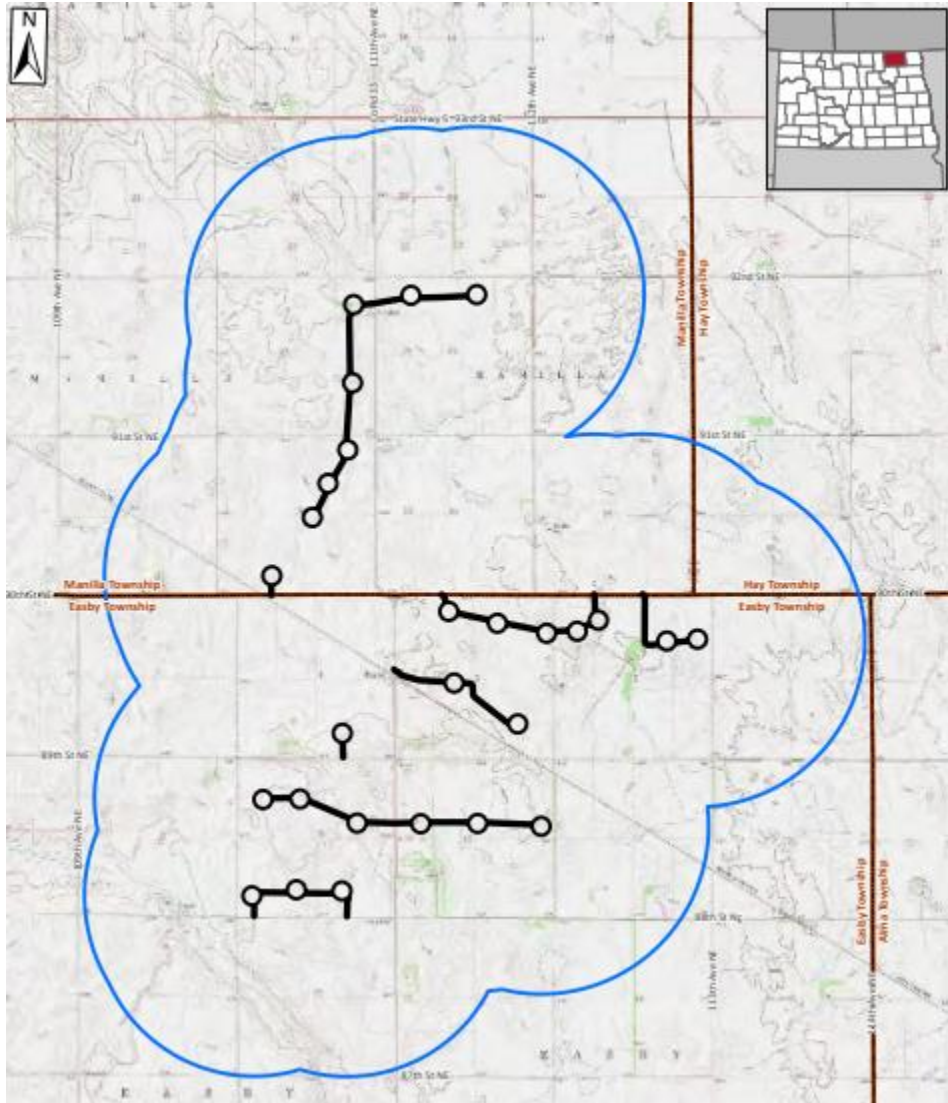
- Use of existing tower and nacelle
- Upgrade components to support longer rotor diameter

COMPONENT REPLACEMENT ILLUSTRATION

- Hub, blade bearings and pitch cylinders will be replaced to accommodate the larger rotor
- Replacement of existing gearbox
- Refurbishment of generator
- Obsolete blades will be recycled



LANGDON WIND LOCATION AND LAYOUT



- Cavalier County
- Langdon, ND
- Commissioned: 2008
- 27 turbines
- 40.5 MW facility
- No change to generator interconnect
- No changes to underground collection, substation



NORTH DAKOTA INVESTMENT

Improved performance of resources is always under evaluation:

- Sourcing of blades expected to be from North Dakota
- Additional state taxes paid by facility
- The upgrades increase energy produced and reduces costs in the long term

COMPLIANCE WITH COMMISSION REQUIREMENTS

Langdon wind equipment upgrade:

- Certification is in Compliance with (NDCC Section 49-22-03(3)(a)):
 - Wholly within designated Project site
 - Improves the existing energy generation technology
 - Complies with the Commission's current exclusion area and avoidance area requirements, including:
 - Turbine setback requirements
 - One property line setback variance request
 - Sound requirement
 - Cultural and wetland avoidance – within previously surveyed/disturbed areas
 - Complies with Commission's prior Orders
- Amendment Request to remove the MW limitation in prior Order and Certificate of Site Compatibility is consistent with prior Commission orders for wind equipment upgrades.

SUMMARY OF REQUESTS

Request of the Commission:

- Certification of the Langdon Wind Equipment Upgrade including the one property line setback variance
- Amendment Request to remove the MW limitation in prior Order and Certificate of Site Compatibility

