

MULTI-MUNICIPAL WIND TURBINE WORKING GROUP

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Protocol for Investigation and Reporting of Wind Turbine Accidents

The Background:

Wind turbines in Ontario are erected in compliance with the Renewable Energy Approvals Regulation, O/R 359/09 which allows wind turbines with a nameplate output of greater than 50 kW (with no upper limit) to be erected as close as blade length plus 10 metres from public roadways, railways, or the lot lines of neighbours with whom there are no participating contractual agreements, so long as the centre of the turbine tower is at least 550 metres from the centre of homes, schools, and other indoor gathering facilities. The assumption of the regulation is that these limits ensure public safety.

The Problem:

In spite of the assumption of the regulation that public safety is assured, in fact in Ontario at least 10 events have occurred which put part of or whole wind turbine blades on the ground at distances of greater than the regulatory setback. Neither have improvements in the failure rate been evident, as it has remained essentially constant after the first few initial failures. Blades have failed, turbines have collapsed, and complete combustion of a turbine nacelle has occurred in Ontario. Action is required to ensure public safety.

The Path Forward:

In the absence of protective provincial regulations, Municipal Councils are obligated to take action to protect the safety of citizens as required by the Municipal Act.

1. Each operator of wind turbines with a nameplate output greater than 50 kW shall be required to make available to the hosting municipality a test program followed to demonstrate the ongoing safety of each turbine, approved by a Professional Engineer considering references such as the CSA 61400 series Standards and references, Germanischer Lloyd guidelines and certification documents or the Det Norske Veritas guidelines and certification documents for wind turbines.

2. Each operator of wind turbines with a nameplate output of greater than 50 kW shall submit annually the results of tests of their wind turbines demonstrating compliance with their identified test program.
3. In the event of any wind turbine failure which places components on the ground at a distance greater than the provincial setback requirement of blade length plus 10 metres (either within the participating landowner property, or outside) the turbine operator shall make an initial report available to the host municipality as well as the relevant provincial regulatory agencies (including the Ministry of the Environment, and the Ministry of Labour) within 24 hours including justification of continued operation of any other wind turbines in the array.
4. The Municipality shall receive a copy of the report of the relevant provincial regulatory agencies.
5. In the event of any failure of a wind turbine that places components on the ground at a distance greater than the provincial setback requirement of blade length plus 10 metres, the operator shall make available to the host municipality a report signed by a Professional Engineer detailing the root cause of the failure, outlining why it occurred considering the previously submitted test program followed to demonstrate the ongoing safety of each wind turbine, and identifying actions to be taken to prevent recurrence before the restart of any wind turbine of the same type in the turbine array in the host municipality.
6. The municipality shall make the submitted failure report available to citizens in the municipality in a publicly accessible manner, and to provincial regulatory bodies.
7. Each operator of wind turbines with a nameplate output greater than 50 kW shall be required to submit a report to the Municipality and Provincial regulatory body annually demonstrating they have reviewed all failure reports of other wind turbines in Ontario and shall state if lessons learned are applicable to their wind turbines and if so, what shall be done to implement the lessons learned. These commitments shall be tracked to completion by the operator.

Conclusion:

The intent of enacting this protocol, by host municipalities under the authority of the Municipal Act is to ensure the safety of citizens within our municipalities from the demonstrated occurrence of wind turbine accidents.