

## STANDARD INFORMATION

**Standard:** CSA C22.2 No. 272

**Standard ID:** Wind Turbine Electrical Systems [CSA C22.2#272:2020 Ed.2]

**Previous Standard ID:** Wind Turbine Electrical Systems (R2019) [CSA C22.2#272:2014 Ed.1]

## EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

**Effective Date:** **October 1, 2022**

## IMPACT, OVERVIEW, AND ACTION REQUIRED

**Impact Statement:** Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard.

### Overview of Changes:

- Updated the requirements regarding large wind turbine disconnecting means;
- Added requirements to emergency stop devices
- Added a new clause on high voltage disconnection means
- Added a new clause on lithium-ion batteries

Specific details of new/revise requirements are found in table below.

***Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.***



## STANDARD INFORMATION

| CLAUSE  | VERDICT | COMMENT   |
|---------|---------|---|
|         |         | <i>Additions to existing requirements are <u>underlined</u> and deletions are shown <del>lined-out</del> below.</i>   |
| 5       | Info    | <b>Grid or external supply disconnection devices and conductor terminations</b>   |
| 5.3     | Info    | <b>Large wind turbine disconnecting means</b>   |
|         |         | Disconnecting means shall   |
| 5.3.1   |         | a) be installed in each supply conductors at a readily accessible location either on or adjacent to the turbine tower;<br>b) be suitable for motor disconnect and rated for 125% of the maximum rated wind turbine current;<br>c) be in accordance with Rule 84-024 of the Canadian Electrical Code, Part I; and<br>d) if installed in accordance with Rules 64-012 and 84-020 of the Canadian Electrical Code, Part I, labelled in a conspicuous, legible, and permanent manner identifying it as the wind turbine generator system disconnecting means. |
|         |         | <u>Large wind turbine disconnecting means may be rated less than 125% of the maximum rated output current where the maximum current marking on the wind turbine nameplate indicates that the generator output current does not exceed the disconnecting means continuous operation marking.</u>   |
| 9       | Info    | <b>Operator interface</b>   |
| 9.7     | Info    | <b>Emergency stop devices</b>   |
|         |         | <b><i>New clause added;</i></b>   |
| 9.7.1   |         | <b>General requirements</b><br><br>The wind turbine shall be provided with emergency stop protocols based on the requirements of Clause 8 of CAN/CSA C61400-1 and Clauses 9.2.7 and 10.4 of CSA C22.2 No. 301.  |
| 9.7.2   | Info    | <b>Emergency stop buttons</b>   |
|         |         | <b><i>New clause added;</i></b>   |
| 9.7.2.4 |         | Actuation of the emergency stop shall effectively isolate the wind turbine from the Electric Power System.  |
|         |         | <b><i>New clause added;</i></b>   |
| 9.7.4   |         | <b>Functionality</b><br><br>Emergency stop functionality shall be based on Category 0 or Category 1 requirements in accordance with CSA C22.2 No. 301.  |



| CLAUSE | VERDICT | COMMENT  |
|--------|---------|--|
|        |         | <b><i>New clause added;</i></b>  |
|        |         | <b>Design of actuator</b>  |
| 9.7.8  |         | Emergency stop devices shall be of the self-latching type and shall employ direct opening operation.<br><br>Note: For more information on direct opening operation, see CSA C22.2 No. 60947-5-1. |
|        |         | <b><i>New section added;</i></b>   |
| 9.9    |         | <b>High voltage disconnection means</b>  |
| 9.9.1  |         | This Clause shall apply to wind turbine generators with circuits operating at voltages of 1000 V ac, 1500 V dc or greater.   |
| 9.9.2  |         | Means shall be provided for disconnection of any high voltage supply if the turbine allows entry of service personnel.   |
| 9.9.3  |         | A high voltage disconnect, actuator, or lockout device shall be located in the nacelle if high voltage is present in the nacelle or tower.   |
| 9.9.4  |         | Opening of the disconnection device shall result in the cessation of turbine power production.   |
| 13     | Info    | <b>Accessories</b>   |
| 13.3   | Info    | <b>Energy storage</b>  |
|        |         | <b><i>New clause added;</i></b>  |
| 13.3.3 |         | <b>Lithium-ion batteries</b><br><br>Lithium-ion batteries shall be certified to CAN/UL 1973 and tested in accordance with CAN/UL 9540.   |