Quality audit – a first step towards building a robust wind turbine power plant

ETD Offers Wind Turbine Equipment Manufacturing Quality Audit Service

Wind turbines are designed to withstand severe operational environment conditions, such as strong wind, storms, heavy rain, icing, and seismic events. However, premature catastrophic wind turbine plant failures occur from time to time, especially with MW rated turbine generator units. As the length of turbine blades becomes over 100m and turbine towers become taller than ever, assuring that the quality of new built wind turbine equipment conforms to the design and manufacturing codes and standards and any additional project-specific specification or requirements, becomes ever more important.

Collapse of an onshore wind turbine unit, on an anonymous construction site in Asia, possibly due to faulty foundation-tower joints during testing at the commissioning stage.

Collapse of wind turbine blades having possibly suffered structural de-bonding and buckling damage in a unit from an anonymous plant after a heavy storm.

In Feb 2024, ETD conducted a wind turbine tower manufacturing process and facilities audit of wind turbine tower manufacturing facilities in Egypt for a 500-MWe wind farm in the red sea coastal areas of Egypt. ETD carried out this audit on behalf of a large European utility.

General photographic view, showing a tubular section formed, inspected by ETD at the plate rolling stage at an anonymous factory.

General photographic view, showing a turbine tower, inspected by ETD at the assembly welding stage at an anonymous factory.

ETD have also carried out other OEM's wind turbine and turbine tower manufacturing process audit inspections at Gold Wind's factories in China during the course of 2023 and 2025.

In previous years at ENGIE, ETD experts had supported the major IPP's renewable power plant expansion efforts, such as a 262.5 MWe new build onshore wind power plant in 2018 by an EPC consortium led by Siemens Gamesa, and a floating offshore wind turbine platform structure manufacturing documentation review project in Portugal during 2019-2020.

***Note*:** Such activities to support clients' renewable power plant construction projects are part of ETD's wider quality surveillance inspection services. These include, for example, P91 power plant Piping spool fabrication and welding, to ensure the quality of power plant equipment meets the necessary project specifications, codes and standards requirements at its factory manufacturing stage as well as at the field erection stage.

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