On-site inspection of wind turbine blades

How is wind turbine blade inspection performed?
Wind turbine blade inspection is performed in two stages,during manufacturing and over operational lifespan on-site. During manufacturing,full surface and sub-surface inspections can be performed by almost all the non-destructive testing techniques.

Should wind turbine blades be inspected on-site or non-contact?
To address these concerns,robotic equipment or human inspectors trained in safety protocols may be used. Non-contactinspection methods,on the other hand,are more flexible and allow wind turbine blades to be inspected on-site without lengthy preparation.

How is a wind turbine inspected?
The final form of wind turbine inspection is physically going up into the turbine and climbing into each of the three blades. Technicians are legally only allowed to go 91ft (28m) inside the blade. With many blades exceeding 200ft,over half of the internal structure is not being inspected.

How often should a wind turbine rotor blade be inspected?
The operator of a wind turbine shall ensure that, as long as it is in operation, the installed rotor blades are inspected and maintained on a regular basis. Inspections and maintenance shall take place at regular time intervals and be based on the procedures specified by the original blade manufacturer (e.g., in manuals).

How does a turbine inspection work?
Typically,the inspection involves an employee turning the turbine blades downwards. Another employee climbs to the top of the tower and then rappels down the blade to visually inspect the surface of the blade and possibly take photos of any defects that are encountered.

How often are wind turbines inspected?
Wind turbine inspection and maintenance schedules vary,but they are typically conducted two to three times a year. With the introduction of wind turbine drone inspection,there's potential for more inspections as drones are more efficient and cost-effective than traditional ones.

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shearography to inspect wind turbine blades (WTB) on site a wind tower is not proven, because a WTB is in constant vibration due to wind even when it is parked on a tower at low-speed wind. ...

The inspection system will provide a rapid, non-contact means of reliably inspecting a composite WTB for

surface and sub-surface defects. The robotic platform will enable systematic, in-situ ...

Wind Turbine Blade Inspection Methods. A wind turbine blade consists of fiberglass and composite resins, prone to numerous issues when exposed to the right conditions. The slightest defect in a blade"s surface can potentially ...

Unrestricted precision inspection. Our FULL VISION model redefines the limits of inspection. Thanks to its high-precision gimbal, capable of movements of -25º +90º in TILT and -90º +90º in YAW, the NEMO FULL VISION captures ...

Current inspection of wind turbine blades is mainly reliant on sending an engineer via rope access. An ideal solution to this problem is to utilise a compact robot that can reach the blade ...

Wind turbine inspection, including wind turbine blade inspection, is a critical activity to ensure the integrity and performance of the wind turbine blades. Wind turbine blade inspection methods ...

Wind turbines are constantly exposed to wind gusts, dirt particles and precipitation. Depending on the site, surface defects on rotor blades emerge from the first day of operation on. While ...

A wind turbine blade inspection system called Winspector has been developed by a European consortium to automate the in-situ non-destructive test-ing of wind blades. A robot platform is ...

It is known that blade failures can cause expensive repairs for long down time. Therefore, wind turbine blade inspection for wind turbines can decrease both cost and cost-uncertainty for wind ...

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