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Vibration-Based Health Monitoring for Offshore Wind Energy Plants

Издательство DEStech Publications, Lancaster, 2010 год

6 стр; формат: 23,5 x 16 см; библиографический список: 7 единиц
ISBN: 978-1-60595-024-2

Код: 10588

Failure of wind energy plants in the past show that standard inspections are not sufficient to assure the integrity of the plants. Furthermore, inspections of offshore wind energy plants (OWEP) under harsh condition on the sea are not at any time practicable and very expensive. For this reason it is important to identify possible damages by continuous monitoring of OWEPs with the help of permanent installed sensor networks and intelligent data processing systems.

This paper presents a recently system for long time monitoring of OWEP, developed within the IMO-WTND project. This system contains algorithms for load identification, damage detection under changing environmental and operational conditions, damage localization, sensor fault identification and operation-al modal analysis.

The results of the monitoring system will be exemplified by means of online-measured signals from the plant M5000-2 over a period longer than eight month.

Ключевые слова:

Содержание.

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