

## 1506 Fire safety in offshore wind turbines – pre study

After blade failure, fire has been shown to be the second most common cause, and past fires have demonstrated the catastrophic potential of such an incident, both to property and life (Solomon, 2013). It has, for example, been shown that in over 90% of the fires in land based wind turbines, in which a fire have originated in the nacelle, a total loss or severe structural damage to the wind turbine was caused. Furthermore, a cue of an unexplained fire in one turbine, which is part of a wind farm, typically causes an operator to switch off the rest of the farm while the cause is investigated. Thus, a fire in a wind turbine may cause large monetary losses, particularly due to the loss of energy production, but also due to replacement and retrofitting to address any issues which may have caused the fire.

In addition, fires in wind turbines may also be devastating to life safety. As an example, in 2013 a fire in a wind turbine in the Netherlands claimed the lives of two people performing maintenance work. Typical causes of the fires have been related to electrical equipment malfunction, hot surface ignition, disc brake malfunction, maintenance and repair activities involving hot work, and lightning strikes.

Yet, there is today an obvious lack of knowledge within the field. How big is, for example, the fire related risk to people and to property? Are current fire safety and fire protection installations and concepts in line with that risk? Are growing demands from insurance companies, i.e., requirements of active fire suppression systems, appropriate? If so, how should these systems be tested and verified in the lack of standardized procedures, guidelines and regulations? How can they be rationally compared, and what performance requirement should they meet?

The goal of the proposed pre-study is, therefore, to produce a white paper on the status of fire safety in offshore wind turbines, including a clear and prioritized presentation of topics that future research will need to address.

The result will be presented at a seminar where stakeholders such as manufacturers, operators and maintenance companies will be invited. The G9 Offshore Wind and Health and Safety Association is given the project a letter of support. Members are Potential stakeholders that may benefit from the pre-study are members of the G9 Offshore Wind Health and Safety Association (Centrica Energi, Statoil, EON, RWE, Dong Energy, Scottish Power, SSE, Statkraft, Vattenfall).

### Kontakt

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### Läs rapporten

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