

EIS 4th Durability and Fatigue

Advances in Wind, Wave and Tidal Energy

Title:

Risk based approach to demonstration of a novel Wave Energy Converter

Presenter:

Charles Taylor
Senior Consultant Engineer
Quoceant Ltd
Bonnington Bond
2 Anderson Place
EH6 5NP

Abstract:

Over 750 person-years of experience was accrued at Pelamis Wave Power resulting in what was the most thoroughly researched, deployed, demonstrated and proven wave energy converter system. While the Pelamis programme has now ended, the knowledge gained and lessons-learned live on within Quoceant Ltd.

The Pelamis P2 machines accumulated 12,000 of testing and generated some 250MWh of energy over the course of 4 years of testing at the European Marine Energy Centre test facility in Orkney. As a result we gained extensive experience of how to identify and mitigate key operational risks and subsequently developed a work-up, inspection and maintenance strategy to deliver a successful risk-controlled demonstration programme. The presentation will provide an overview of the how the approach to design, qualification and testing and instrumentation were integrated to inform an operational strategy that mitigated key risks and enable the safe demonstration and optimisation of such a novel system.