

## **Abstract**

### **The role of Structural Redundancy for planning Offshore and Marine Renewable Energy Inspection Strategies.**

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Structural Redundancy is a key element in the damage tolerance of large structures. Whereas we often associate resistance to failure with fracture toughness, large marine steel structures including offshore oil & gas and ships have traditionally been designed to endure the local loss of structural members and capacity.

As we enter a new era of Offshore and Marine Renewables Energy Structures which are becoming highly optimised with respect to structural utilisation, we need to be mindful of the consequences of increased structural efficiency upon ability to tolerate defects and progressive damage mechanisms such as corrosion and fatigue.

This presentation describes these effects with particular emphasis on inspection strategy and the consequences of adopting conventional inspection methodologies to these new structurally efficient installations.