
JNRC Risk Engineering guidelines for FOW

NIORD Wind Academy, Bergen

Daniel Stevens, Head of Engineering, AXIS

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Overview of LMA & JNRC



- The Lloyd's Market Association (**LMA**) comprises all Lloyd's members' agents, and all 55 Lloyd's managing agencies
 - Provides professional and technical expertise to the wider market
 - Established to promote best principles and practice of marine energy and related insurance and reinsurance
 - Includes the **Joint Natural Resources Committee (JNRC)** which represents the interests of insurers writing offshore energy risks in London.
- The **JNRC Survey and Engineering Subcommittee**
 - Addresses matters of technical interest within the Upstream Energy & Renewables insurance market
 - Comprises mainly risk engineers
 - Work closely with Society of Offshore Marine Warranty Surveyors
 - Custodian of **Technical Documents** & Lessons Learned
- Currently working on a set of **Risk Engineering guidelines for FOW**, aimed at developers, brokers, investors to ensure there are no surprises when cover is sought

Project Cargo		
Clause	Date of Issue	Version
JR21-032 - JRC Project Cargo COP SOW COA	October 2021	1
JR21-032A - JRC Project Cargo MWS Endorsement	October 2021	1

Offshore Operations		
Clause	Date of Issue	Version
JNR2024-045 - Upstream Survey and Reporting Protocol	April 2024	1

Offshore Renewables		
Clause	Date of Issue	Version
JR2021-028A Renewables Warranty Endorsement	May 2021	1
JNR2023-029 Renewables COP SOW COA	February 2023	2
JNR2023-041 - Offshore Wind Farm Survey Guidelines	June 2023	1

MWS Companies Good Practice Guideline		
Clause	Date of Issue	Version
JR2019-010 MWSC Pre-Qualification and Good Practice Guideline	September 2019	2
Marine Warranty Surveyor appointment R07 12-02-24	May 2024	1

JNRC Risk Engineering Guidelines for FOW

- Working group comprising members of JNRC S&E SC, BV & DNV
- Established Q2 2023
- Scoping input provided by World Forum Offshore
- The Guidelines include:
 - Insurer's key areas of concern and key loss scenarios
 - Summaries of the current perceived gaps in the areas of design, installation methods and operational strategy for FOWFs
 - Recommendations to insureds on the information required at submission



RISK ENGINEERING GUIDELINES FOR
INSURANCE OF FLOATING OFFSHORE WIND
FARMS

Key Topics & recommendations

- **Guiding principles**

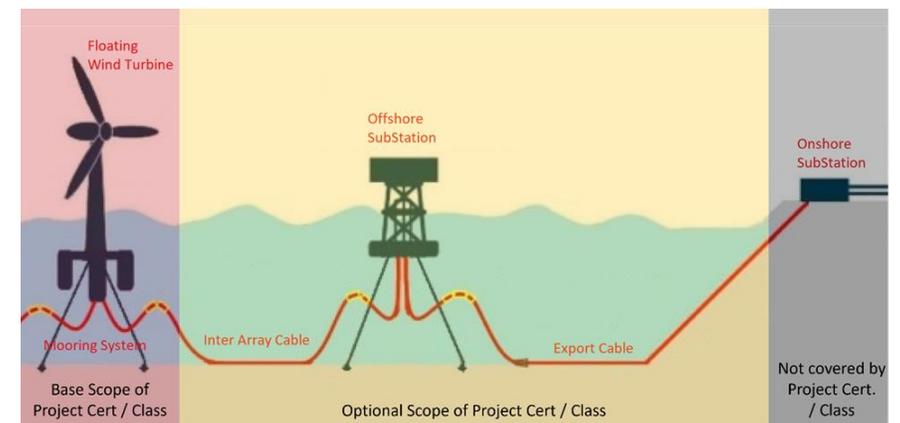
- Preference for independent verification, but an awareness that gaps exist in those frameworks
- TRL 7 or higher

- **Certification & Classification**

- Overview of IECRE 502, BV and DNV approaches
- Clarity on what is and isn't covered by each; options for integration
 - E.g. Under DNV-SE-0422, DNV can then "integrate" the Class Notation of the floater and mooring into the DNV project certification framework (DNV-SE-0190)
- JNRC are agnostic...but gaps must be addressed in submissions

- **Mooring design considerations**

- Redundancy definitions & implications of DNV Consequence Classes
- Monitoring and inspection regimes
- Clarity on loss scenarios for single or multiple ML failures
- Overview of anchor types we are expecting to see



Key Topics & recommendations

- **Cables**

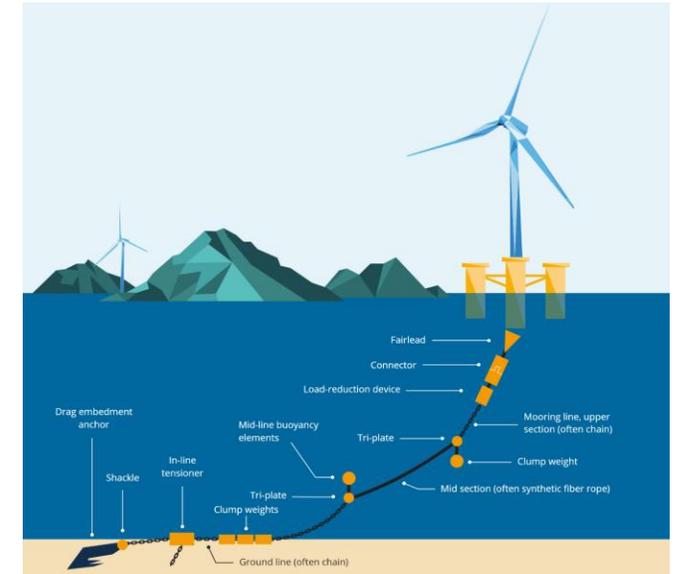
- Expected cable types and failure modes
- Overview of standards gap for dynamics > 30 kV; options available to fill that gap
- Auto-disconnect system considerations
- Best practice for CMS (installation and operations)

- **Floater & WTG control systems**

- The risk of gaps in the coupled loads modelling; contingent need for clarity
- Warranty implications of limited WTG OEM input
- Lessons learned from scale tests; implications of new tech failing (e.g. Active Ballast)
- Classification vs Flag; TRL 7 as a minimum requirement if not classed

- **Marine Ops**

- Construction - wet storage, pre-installation of Mooring Systems, Towage of Floaters, Hook Up, Commissioning
 - Method statements, weather windows and HAZOP requirements for each phase; contingency plans
 - Type certs for fabrication if available
- Operations - a focus on the need for loss scenarios required for MCEs and clarity on TRL of any in-situ repair options presented



Key Topics & recommendations

- **Marine Warranty Surveyors**

- Existing JNRC CoP and SoW already includes a scope of work for FOWFs
- Work currently ongoing on a set of best practice guidelines for Flagging FOWTs when being towed back for maintenance

- **Next steps:**

- Comments from JNRC S&E being addressed in Version 2
- V2 to be circulated to wider JNRC & some brokers for comment
- **Aiming to be published on LMA website in September 2024**

Example of end of chapter summary:

Concern	Recommendation
Status and overview of warranties not known	Overview of warranties and date of lapsing for these. If imminent information if <u>any</u> <u>EoW</u> (End of Warranty) inspections are planned. Clear description of which costs and services will be covered by OEM.
Loss implications for MCE	Overview of how different MCEs will be undertaken, whether in situ or tow-to-port, with expected downtime and weather windows included
Status and overview of Service and Maintenance Agreements	Overview of any SMA and/or availability guarantees in-place. Provision of both summary of services included as well as full-body contracts. Clear description of which costs and services will be covered by OEM.
Weather Limitations for Access to unit.	General overview of weather restrictions for access to assets as well as execution of main maintenance and repair operations. An overview of which generic operations are considered feasible or not for various times of the year as well as information to what is the limiting task for the various operations. Information as to the method of access and/or interaction with the unit (person on floater/in unit, diver, WROV, other?)

Thank you



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