Turbine support vessels ill-served by existing legislation

As the number, type and size of turbine support vessels grows so does the urgent need for comprehensive rules and regulations covering their design and operation

by Philip Woodcock*

As turbine support vessels have evolved, so the need for new rules and regulations has grown

Crew transfer or 'turbine support vessels' play a significant role in the operation of offshore windfarms and have an ever increasing scope of work, sometimes well beyond the transport of engineers.

Traditionally, the majority of turbine support vessels have not carried more than 12 passengers and have been certified under national rules for service in the waters of a flag state, the majority being certified under the UK Maritime & Coastguard Agency's (MCA) Work Boat Codes.

Vessels operating in non-UK waters have either been certified under very strict national rules, and built to classification society standards, or operate as MCA Work Boat Code vessels under limited term exemptions. The increasing demand for vessels to operate in Germany and Denmark has resulted in more vessels being built to class rules, with the DNV WFSV 1 notation being the most popular choice.

As windfarms move further offshore, more attention is being placed on total logistical cost rather than just charter rates, resulting in the industry facing increased requests for vessels that are fast, can carry cargo and more than 12 passengers, as well as being fuel-efficient.

However, increasing the number of passengers carried by a vessel raises a significant problem in that there are no clear, practical rules for the construction, certification or operation of vessels carrying more than 12 passengers.

The Safety of Life at Sea Convention (SOLAS) only distinguishes between crew and passengers, with the latter being defined as any person other than the master or members of the crew. A passenger ship is defined as one carrying more than 12 passengers.

At the time of the first Solas Convention, it was not envisaged that people other than crew and passengers would be transported, so the convention did not take account of what might be termed 'industrial personnel.'

As the maritime industry has evolved, however, the International Maritime Organization (IMO) has adopted new codes that seek to amend SOLAS to meet the requirements of specific ship types. The Special Purpose Ship Code (SPS 2008), for instance, allows for the fact that some ships carry personnel who are not crew but work in connection with the special purpose of that ship. However, it excludes ships where the industrial personnel do not work on board the vessel, so it is not a suitable code to solve the problem with turbine support vessels.

The High Speed Craft Code (HSCC 2000) was developed specifically to address the need for alternative rules that allow for lighter construction, so that vessels could travel at higher speeds. It was developed with a focus on the carriage of pure passengers and/or cargo on fixed services between specific ports. It traded standard passenger ship construction for higher operational safety, such as type approval training for crew, high levels of structural fire protection, and strictly approved operating envelopes. However, the authors of the HSCC 2000 did not contemplate the carriage of windfarm engineers who have basic safety training, are medically fit and are familiar with basic safety equipment, such as life jackets and immersion suits, which are part of their daily equipment.

Vessels constructed to meet the requirements of HSCC 2000 have a construction price at least 25 per cent greater than a similarly-sized 12-passenger vessel and have much higher operating costs due to additional crew certification requirements and higher operating costs. This is coupled with the need for operating on pre-approved routes which does not allow the flexibility needed for windfarm service.

The classification society DNV has attempted to solve this issue by proposing windfarm service vessel rules, in the form of its WFSV 2 notation. Other class societies are doing likewise (see box) and are producing similar rules. DNV's rules propose a practical interpretation of the HSCC 2000, directed towards services such as windfarms.

DNV's concept has generated a positive response from regulators and industry alike, but is limited by the fact that they are class rules and not statutory regulations. Germany has spearheaded a proposal for a solution based

on the DNV approach through IMO, but this is a slow process, with the direction coming from the IMO's design and equipment sub-committee meeting (DE57) in early 2013 at the earliest.

Given all of the above-mentioned, the IMO agrees that requirements for the carriage of industrial personnel such as offshore windfarm engineers, certainly need to be clarified, but a quick, local or regional solution such as the acceptance of WFSV 2 is unlikely due to the European Union's approach to passenger vessels in general. Other flag states are proposing solutions of their own, but no clear path has emerged and these face the risk of not being accepted by coastal states in which vessels will operate.

For the time being, it seems, operators are faced with the risk that vessels built to comply with rules in force today could be at an extreme commercial disadvantage in the future if rule changes allow the construction of less expensive vessels. If they attempt to push the regulatory envelope, they could find they are not allowed to operate by a port state.

Without definitive guidance from the IMO or from states bordering the North and Baltic seas, the industry is left with an uncomfortable level of commercial and regulatory risk, and inevitably, this risk will be passed on to the windfarm developers and, in the end, electricity consumers. **OWJ**

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New rules issued by GL

In recent weeks, another classification society, Germanischer Lloyd (GL), has announced the release of its own set of classification rules for crewboats serving the offshore oil and gas industry, and vessels operating in offshore windfarms (or 'windfarm service craft' as it calls them).

The rules, which entered into force on 1 May 2012, were developed by bringing together, for the first time, all of the relevant GL rules and the international codes and recommendations which can be used for the classification of these kinds of vessels.

"The rules will allow designers to develop vessels built to the special needs of their clients with full confidence in the fact that their vessel can meet with classification approval," said GL, noting that the rules were developed in consultation with the flag states.

The rules break down vessels of this type into 16 types. "Such a breakdown will allow not only the easy identification of class requirements but a design tailored to meet project specifications and budgets," said GL. The main parameters it uses are: the number of non-crew personnel to be carried (below or above 12), the length of the vessel (below or above 24m), speed, and hullform (mono or multihull).

The rules consist of 18 sections with the first two covering general requirements, classification and surveys. Sections 3 to 8 deal with the structural requirements, while sections 9 to 18 cover machinery, electrical and automation systems, in particular as regards the operation of the vessel. In addition, special requirements are introduced, such as for bow designs matching the boat landings of offshore structures, as well as special provisions for the transfer of personnel.

New GL class notation has been introduced with the rules, including: 'Crew Boat 1', for vessels which are intended to carry 12 offshore support personnel (OSP) or fewer; 'Crew Boat 2', for vessels intended to carry more than 12 OSP; and 'Offshore Windfarm Service Craft' (OWFSC) for vessels dedicated to windfarm service, restricted to the carriage of 60 OSP or fewer. The class notation 'RPw' can also be given to vessels fitted with two completely independent propulsion systems, which are designed to operate in the vicinity of windfarms.

Sections covering the variety of mechanical equipment used on crewboats and turbine support vessels have been developed in order to take into account the specialised requirements of offshore operation, including personnel transfer systems, stabilisation systems, and helicopter winching. The deployment of vessels in extreme weather conditions is also covered.

Vessel safety guide published

For some time, Renewable UK and the Crown Estate have been working in partnership in connection with health and safety matters. Renewable UK is the UK industry group for wind and marine energy, and the Crown Estate is the owner of the seabed, upon which offshore windfarms are installed.

Published on 2 April, the Vessel Safety Guide they have developed provides information and insight into the health and safety aspects relating to the selection of vessels for operations in the UK's renewable energy zone. As legal experts Andrew Jackson explained, the guide is aimed mainly at developers or those new to the offshore renewable sector who may not be familiar with the operation of vessels or are considering using vessels in deep water or further from shore.

It should be pointed out that nothing in the guidance is new in terms of regulations and that it simply emphasises current health and safety regulations put in place by such bodies as the UK's Health and Safety Executive and the Maritime and Coastguard Agency. The objective of the guide is to allow offshore developers and others to conduct more informed and risk-based decisions in the selection and operation of vessels.

The guidance covers effective vessel selection and operation as well as the regulatory aspects of vessel selection including certification. It also includes suitability considerations to be taken into account when selecting a vessel, as well as reviews at the end of the project. The guide has been put together with assistance from DNV.

The guidance will be of importance both to offshore developers and those operating and maintaining offshore work vessels. It will also be of interest to insurers of vessels as risk management and observance of industry-accepted guidelines are important issues, both for insurance underwriters and those handling claims that may arise.

Andrew Jackson's regulatory team has considerable experience of dealing with offshore and marine related incidents and accidents in respect of civil claims, but also importantly in respect of the potential for regulatory breaches ultimately leading to a possible prosecution in the criminal courts.

Commenting on the guide, partner and head of offshore renewables Andrew Oliver, said: "This guide gives all those involved in the offshore renewable energy industry clear guidance on what rule or rules may or may not apply to their operations.

"Hopefully, it will lead to a safe operating environment for all those involved. However, accidents do and will happen and marine regulation is technical and complicated. Those falling foul of regulatory compliance should take advice as soon as possible especially if they are invited to be interviewed under caution. Advice at an early stage on how to handle an investigation can have a considerable impact on the way in which the matter is eventually dealt with."