

OFFSHORE WIND REPORT
SAFETY AND COMPLIANCE INSIGHTS:
UNDERSTANDING U.S. REGULATIONS
FOR OFFSHORE WIND VESSELS

JUNE 2021



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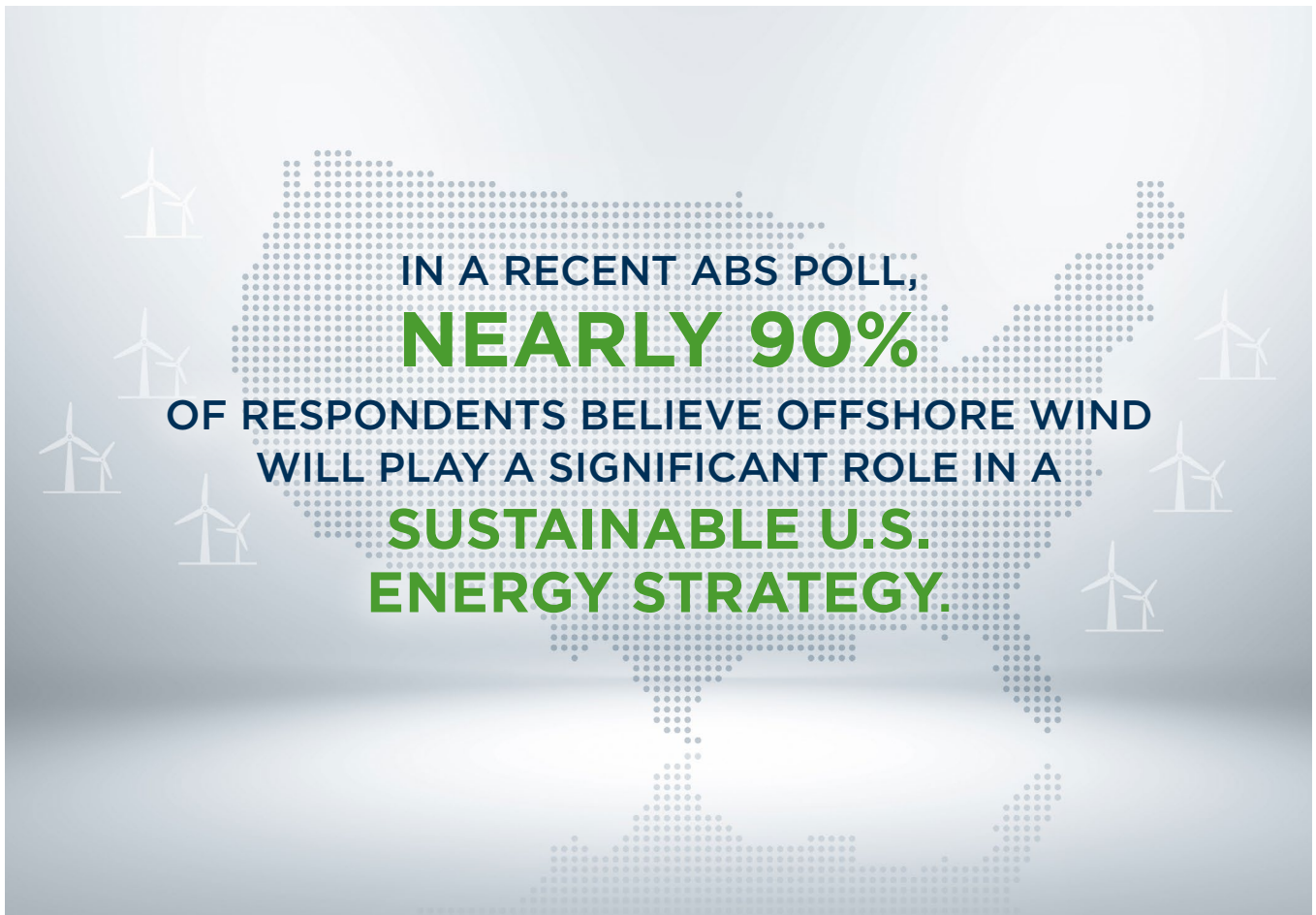
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1. INTRODUCTION

United States (U.S.) Offshore Wind represents a growth segment of the maritime industry at both the domestic and international level. After a period of relatively slow forward progress, the U.S. Government has re-focused efforts to promote renewable energy development with a goal of 30 GW of generating capacity installed by 2030 and to review more than a dozen lease area Construction and Operations Plans (COPs) by 2025. To support this ambitious activity, the White House announced in March 2021 that grant and funding resource opportunities related to offshore wind have been designated by the U.S. Department of Transportation Maritime Administration as well as the U.S. Department of Energy Loan Programs Office. With the offshore wind market momentum building, numerous stakeholders and interested parties are accelerating their plans for engagement into the U.S. region.

As a Classification Society, the **American Bureau of Shipping (ABS)** is a leading technical organization for safety, environmental and statutory compliance. ABS has synthesized the following collection of frequently asked questions on topics directly related to U.S. offshore wind support vessels. This is based on a significant volume of external queries ABS has received with respect to vessel designs and specifically the U.S. regulatory framework. The intention of this publication is to facilitate the maritime industry's understanding of various requirements and to promote dialogue between owners, operators, developers, designers, builders, class and U.S. authorities. While ABS uses reasonable efforts to accurately describe the information herein, the United States Coast Guard (USCG) retains responsibility for determination of domestic regulatory compliance and applicability.

Readers are encouraged to contact ABS for additional information or to submit questions directly to GlobalOffshore@eagle.org



2. U.S. REGULATORY FRAMEWORK

2.1 WHAT IS THE “JONES ACT”?

The Merchant Marine (“Jones”) Act of 1920 is a U.S. trade law that defines how maritime commerce is regulated. Specific restrictions limit the transfer of cargo between U.S. ports to only vessels registered and built in the U.S. Ownership of such vessels must be by majority U.S. incorporated entities with U.S. citizen representation. Vessel crewing is satisfied using USCG credentialed mariners and a majority of U.S. citizens.


While the U.S. Customs and Border Protection agency (CBP) holds ultimate responsibility for making rulings on whether a specific trade activity is subject to the Jones Act, the USCG determines whether a vessel is U.S. built and therefore eligible for Jones Act trade. USCG has determined that ‘U.S. built’ can be achieved if all major components of a vessel’s hull and superstructure are fabricated in the U.S. and the vessel is assembled entirely in the U.S. Note that foreign components like engines, propellers and certain elements of the hull, such as external appendages, are not counted. Construction of a vessel to U.S. standards and certification by USCG may be achieved outside of the U.S. for international trade but is not eligible for Jones Act designation unless specifically permitted via a formal waiver process. Waivers are rare and only typically granted for national defense or emergency justifications.

2.2 HOW DOES THE JONES ACT IMPACT OFFSHORE WIND SUPPORT VESSELS?

The CBP has issued several rulings in 2021. Under HQ H309186 released in January 2021, CBP applied the Jones Act for transportation of merchandise from a U.S. port to a location on the Outer Continental Shelf (OCS) for development of wind energy, with particular identification of ‘scour protection’ rock deposits. However, in a follow up ruling, CBP issued a clarification through HQ H317289 in March 2021, indicating that “ Jones Act does not apply to activity occurring at the pristine seabed on the OCS, which has been CBP’s longstanding position on the issue.” The CBP’s interpretation of specific types of vessel operations for offshore wind construction is dynamic.

Currently, vessels engaged in transportation of wind turbine components from a U.S. port to the installation site on the OCS would be required to be Jones Act eligible and registered in the U.S. A vessel not registered in the U.S. or is Jones Act ineligible would be prohibited from transporting, but not handling, such materials. A concept of operations where a U.S. built wind turbine installation vessel (WTIV) transported turbine and tower components from a U.S. port location for direct erection offshore is understood to meet the CBP’s interpretation of the Jones Act.

Alternatively, a non-U.S. built WTIV which is lifting components from a U.S. registered feeder barge/lifeboat onto a column or bottom foundation is understood to follow current Jones Act interpretations as not transporting but ‘handling’ merchandise. Crew transfer vessels (CTVs) and service operation vessels (SOVs) are subject to Jones Act restrictions when operating between coastal zones, including marshalling/load out areas and the wind park.



**THE MAJORITY OF RESPONDENTS
SURVEYED BY ABS CITED THE
U.S. JONES ACT AS THE GREATEST CHALLENGE
FOR OPERATING VESSELS IN THE U.S. OFFSHORE
WIND MARKET. RESPONDENTS ALSO EQUALLY RANKED
ENVIRONMENTAL SUSTAINABILITY
AND MARITIME SUPPLY CHAIN
AS KEY CHALLENGES.**

2.3 WHAT ARE THE CENTRAL ELEMENTS OF U.S. REGULATIONS FOR VESSEL DESIGN, CONSTRUCTION AND OPERATION?

The USCG has the responsibility for enforcing domestic and international maritime safety and pollution prevention regulations. This is accomplished through U.S. ratification of International Maritime Organization (IMO) conventions which become integrated into domestic law normally followed by development of complementary regulations. The Code of Federal Regulations (CFRs) is a consolidated set of the specific regulations and the following sections apply generally to the U.S. maritime industry:

33 CFR – Navigation and Navigable Waters, Chapter I specifically addresses USCG's role and authority, including marine pollution prevention and ballast water regulations

46 CFR – Shipping, Chapter I specifically addresses the various vessel categories and applicable regulations. Commonly applicable subsections for wind support vessels include:

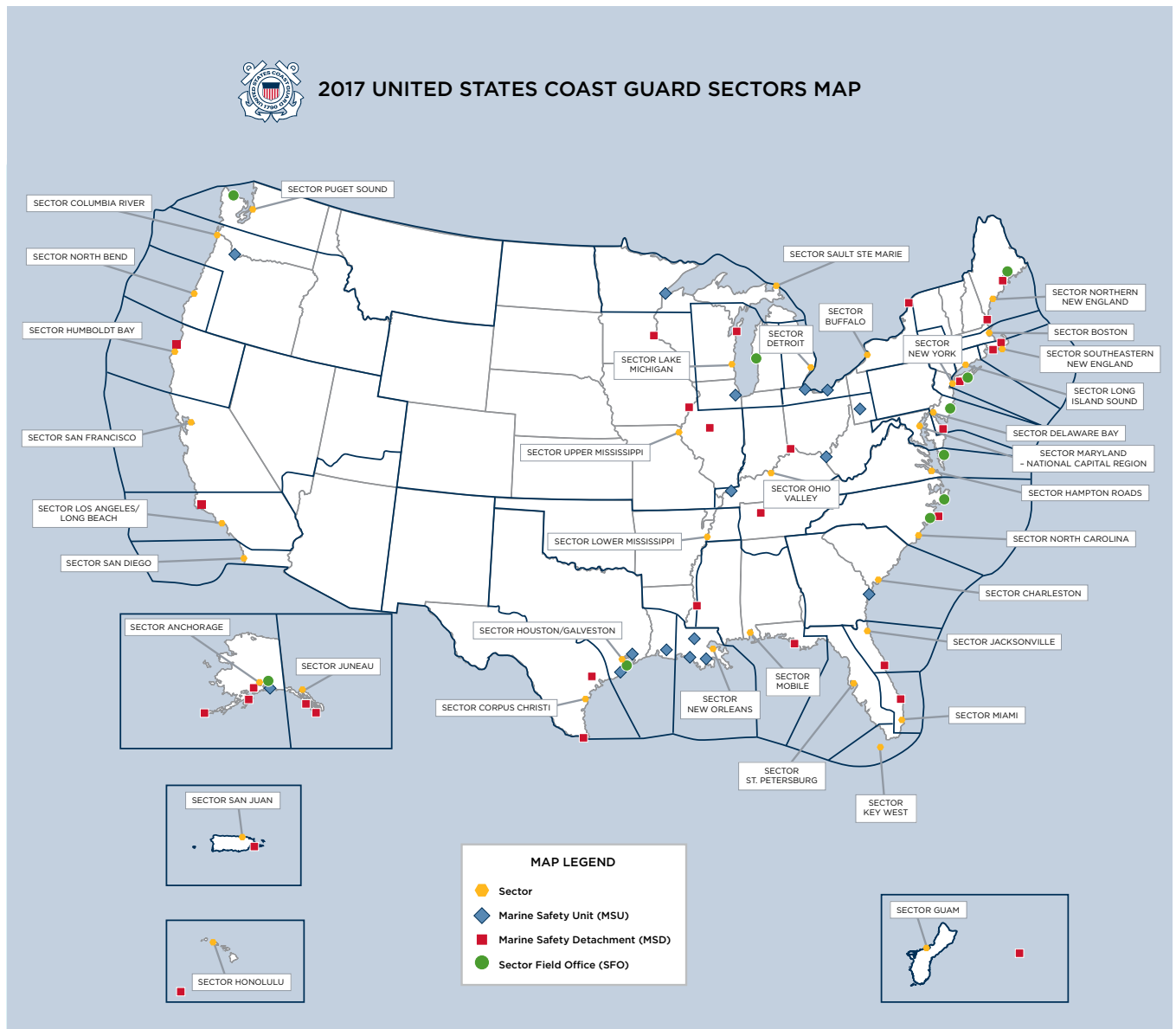
- SUBCHAPTER E - LOAD LINES (Parts 41 - 47)
- SUBCHAPTER F - MARINE ENGINEERING (Parts 50 - 64)
- SUBCHAPTER G - DOCUMENTATION AND MEASUREMENT OF VESSELS (Parts 66 - 69)
- SUBCHAPTER I - CARGO AND MISCELLANEOUS VESSELS (Parts 90 - 106)
- SUBCHAPTER J - ELECTRICAL ENGINEERING (Parts 110 - 113)
- SUBCHAPTER L - OFFSHORE SUPPLY VESSELS (Parts 125 - 135)
- SUBCHAPTER Q - EQUIPMENT, CONSTRUCTION, MATERIALS: SPECIFICATIONS AND APPROVAL (Parts 156-165)
- SUBCHAPTER S - SUBDIVISION AND STABILITY (Parts 170 - 174)
- SUBCHAPTER T - SMALL PASSENGER VESSELS (Parts 175 - 187)
- SUBCHAPTER V - MARINE OCCUPATIONAL SAFETY AND HEALTH STANDARDS (Parts 197 - 198)
- SUBCHAPTER W - LIFESAVING APPLIANCES AND ARRANGEMENTS (Part 199)

2.4 HOW IS THE USCG STRUCTURED AND WHICH DEPARTMENTS ARE RESPONSIBLE FOR VESSEL MARITIME SAFETY WITHIN THE CONTEXT OF OFFSHORE WIND SUPPORT VESSELS?

The USCG is a branch of the U.S. Armed Forces and is under the control of the U.S. Department of Homeland Security. Policy and regulations for maritime safety, engineering and prevention regarding commercial vessels are the responsibility of the USCG, which is headquartered in Washington, DC and is comprised of the following key offices:

- **Commercial Vessel Compliance (CVC)**: In charge of in-service vessel inspection, quality control, appeals and coordination with sector field offices across the U.S.
- **Marine Safety Center (MSC)**: Carries out vessel statutory plan approval directly or delegates to a Recognized Organization (RO) through an approved framework. In the course of this duty, the MSC also establishes rulings and interpretations for regulatory and design approval matters relative to domestic and international regulations.
- **CG Marine Engineering (ENG)**: Provides technical subject matter expertise and informs MSC, CVC and Officer in Charge, Marine Inspection (OCMI).

In addition, the USCG maintains district zones that are geographically distinct based on relationship to navigable waterways. Within each district is a command structure that includes individual sector offices with an OCMI who has jurisdiction over domestic vessels operating within that region. The OCMI office will issue the offshore wind support vessel a Certificate of Inspection (COI) to all U.S. flag vessels after all requirements are verified and the vessel enters service. Other offices within the OCMI sector conduct port state control boarding for foreign ships making port calls within the U.S.



2.5 ARE THERE SPECIFIC PROGRAMS WHERE THE USCG HAS DELEGATED AUTHORITY TO CLASSIFICATION SOCIETIES?

Yes. Navigation Vessel Inspection Circular (NVIC) [2-95 Change 3](#) issued by the USCG outlines a program entitled Alternate Compliance Program (ACP). Eligible vessels may be enrolled at the time of construction or for existing vessels after registration with the USCG.

This program reduces the duplication efforts of the Class society and the USCG by allowing the Class to act on behalf of the Flag for statutory inspections related to international conventions (SOLAS, MARPOL, Load Line, etc.). Upon issuance of the international certificates, the USCG will then issue the vessel the national Certificate of Inspection (COI). This program is supported by a limited number of authorized Class Societies, who must utilize a set of additional requirements described under the [ACP U.S. Supplement](#) where differences with International Conventions and USCG regulations are known to exist. The ACP U.S. Supplement was revised in March 2021 to consolidate the individual Class Society documents into a single unified document. As a result, project-specific Design Basis Agreements (see section 2.4) will likely take a more central role in clarifying statutory equivalences and alternatives for novel or complex designs which integrate a mixture of IMO instruments, Class rules and U.S. domestic regulations.

Under the ACP, the RO performs the vessel survey and inspection roles with oversight from USCG during the new construction activity as well as after vessel delivery and entry into service. USCG retains the role for vessel security audits, crew safe manning and credentialing, drug/alcohol testing program oversight and fire/safety drill performance verification. USCG ACP authorization exists only for ABS, LR, DNV and ClassNK as Recognized Organizations.

Additionally, [NVIC 10-82 Change 2](#) is a separate optional program for delegated authority for vessel design review and survey during new construction or major modification.



The owner or builder must apply to the USCG for enrollment on a project-specific basis. Once accepted, ABS carries out plan review on behalf of the USCG with selective oversight by Flag. USCG retains authority for review of certain plans, such as general arrangements, fire safety and lifesaving arrangements. During construction, ABS acts on behalf of the USCG OCMI, thereby streamlining the involvement of marine inspectors. This program can significantly shorten the duration of the statutory plan approval and survey processes during vessel construction or modification but is not applicable for in-service inspections.

Lastly, [NVIC 10-92 Change 2](#), is a review program where a U.S. licensed professional engineer (PE) may certify compliance with the USCG requirements to the USCG MSC. Unlike NVIC 10-82, a pre-approval for program acceptance is not required, and inspections during the construction or modification are not covered.

A designer or shipyard may submit regulatory plans to a PE or Recognized Classification Society, who will examine them against applicable U.S. requirements before transmitting the recommended results to the USCG MSC for confirmation and final acceptance. This program expedites the overall plan approval process and provides both the USCG and the designer with elevated confidence that the drawings are fully compliant at the initial submission.





2.6 WILL THE USCG ACCEPT VESSEL DESIGNS THAT HAVE BEEN PREVIOUSLY APPROVED BY OTHER FLAG AUTHORITIES IN ACCORDANCE WITH INTERNATIONAL STANDARDS AND IMO CONVENTIONS?

It is important to recognize that the USCG will require compliance with its regulations regardless of previous approval. In principle, the USCG will accept international designs provided they meet or exceed U.S. regulations, as the U.S. is signatory to the majority of IMO Conventions. For projects accepted under the ACP, those requirements are augmented by additional requirements as per the ACP U.S. Supplement to bridge any gaps with 46 CFR regulations. The other delegation programs (see section 2.3) will require review to ensure compliance with domestic regulations. Since modern vessel designs may incorporate arrangements, technology or mixed concepts of operation that are not neatly captured by USCG regulations, a design basis agreement (DBA) may be created by the designer/builder to identify all applicable Class Rules and codes/standards that are being adopted to mitigate safety and pollution risk as an equivalent to the USCG regulations.

DBAs are commonly used for projects where the operating characteristics, design elements or adopted technology/novel concepts being employed are not well governed by the existing domestic or international regulations. A successful DBA is normally developed in conjunction with the Class Society and the designer/builder at an early stage of the project, well before contract for construction is established. A risk- or goal-based approach is taken with integration of certain prescriptive requirements. This is especially recommended when U.S. regulation or USCG policy is unclear or in conflict with established international standards.



ABS ENGINEERING IS WELL ESTABLISHED IN EXPERIENCE AND PROCESS TO ASSIST OWNERS TO GENERATE A DESIGN BASIS AGREEMENT (DBA) USING A PROVEN FORMAT.

3. SERVICE OPERATION VESSELS (SOV)

3.1 HOW IS THE IMO SPS CODE VIEWED WITHIN THE CONTEXT OF U.S. DOMESTIC OPERATION FOR VESSELS WITH WIND TURBINE TECHNICIANS/OFFSHORE WORKERS IN ADDITION TO THE CREW?


SOV designs currently utilize an international design basis in accordance with the IMO's Code of Safety for Special Purpose Ships (SPS Code). The USCG views industrial personnel (IPs) on SOVs as offshore workers and have requirements for above or below 36 such persons on board. U.S. regulations for offshore support vessels defined under 46 CFR Subchapter L are focused on offshore workers under 36 persons and gross tonnage over or under 6,000 gross tonnage (GT). When more than 36 offshore workers are on board, additional regulations based on passenger vessel and SPS code requirements begin to enter the picture. It is the choice by owner/designer to pick either domestic U.S. operation or to also include international operations. Proposal for carriage of more than 36 offshore workers on vessels less than 6,000 GT is to be included in the DBA submitted to the USCG.

For SOVs carrying more than 36 offshore workers, there are two options generally available: one for domestic operation and one for international operation. The domestic option entails compliance with the USCG MSC Technical Note MTN 01-19, while the international option employs NVIC 2-95 ACP with a DBA.



First Jones Act Compliant SOV will be Built to ABS Class

FOR SOVS ENROLLED IN THE ALTERNATE COMPLIANCE PROGRAM (ACP), ALL REQUESTS ARE TO BE SUBMITTED TO THE USCG MARINE SAFETY CENTER (MSC) VIA A DESIGN BASIS AGREEMENT (DBA) PROPOSAL, WHICH ABS ENGINEERING CAN DIRECTLY SUPPORT AS AN AUTHORIZED CLASSIFICATION SOCIETY.



NEARLY HALF OF ALL RESPONDENTS IN AN ABS POLL IDENTIFY COST AS THE MOST IMPORTANT ASPECT FOR A U.S. OFFSHORE WIND VESSEL PROJECT. DESIGN AND REGULATORY COMPLIANCE WERE ALSO RANKED AS IMPORTANT ASPECTS.

Vessels Operating in the U.S. Domestically

It is ABS' experience that the USCG has required that these vessels comply with the Federal Register, Vol. 79 and these regulations are primarily applicable to vessels over 6,000 GT and with carriage above 36 offshore workers. The application of MTN 01-19 addresses scenarios with such worker carriage configurations but less than 6,000 GT size; however 46 CFR 127 Subpart F should be primarily applied. Examples of aspects that should be considered by the vessel designer include:

- i. Some arrangements will have to comply with oil carrier requirements (46 CFR Sub Chapter D)
- ii. Structural fire protection requirements as applicable to cargo ships, exterior boundaries of superstructures/ deckhouses facing cargo areas and cargo pump room segregation shall comply with oil carrier requirements
- iii. Fire protection requirements as applicable to passenger vessels carrying not more than 36 passengers need not comply with regulations II-2/21 and II-2/22
- iv. Lifesaving appliances are vessel specific and have to obtain a design basis from the USCG. (Note that the USCG typically expects Subchapter I cargo vessel lifesaving arrangements for designs meeting SPS/46 Subchapter F in lieu of passenger vessel formats, but may permit such adoption with technical justification)
- v. Additional hazardous area requirements
- vi. Damage stability requirements as applicable to passenger vessels

Vessels Operating Internationally

It is ABS' experience that the USCG has required that these vessels comply with the Federal Register, Vol. 79 and these regulations are primarily applicable to vessels over 6,000 GT and with carriage above 36 offshore workers. The application of MTN 01-19 addresses scenarios with such worker carriage configurations but less than 6,000 GT size; however 46 CFR 127 Subpart F should be primarily applied. Examples of aspects that should be considered by the vessel designer include:

- i. The USCG may consider recognizing the IMO SPS Code in addition to 46 CFR Subchapter L as part of an overall DBA through enrollment into the NVIC 2-95 ACP scheme when evaluating overall safety risks.

BECAUSE THE USCG DOES NOT CURRENTLY AUTHORIZE ISSUANCE OF SPS CERTIFICATES, INCLUSION OF ABS CLASS NOTATION **SPS CAN ALSO SERVE TO SUPPLEMENT THE DOMESTIC REGULATORY FRAMEWORK.**

If the owners elect not to comply with the SPS Code, then it is recommended that they approach the USCG with a suggested alternative compliance strategy or obtain the additional statutory requirements.

IMPORTANT ASPECTS OF THE SPS CODE

SOVs With Less Than 60 Total Persons

- i. Requirements are based on the total number of persons (includes crew and offshore workers) on board the vessel
- ii. Lifesaving appliances should comply with the requirements contained in Chapter III of SOLAS for cargo ships other than tankers
- iii. Fire protection should comply with the requirements of Chapter II-2 of SOLAS for cargo ships
- iv. Subdivision and damage stability should in general be in accordance with Chapter II-1 of SOLAS where the ship is considered a passenger ship and special personnel are considered passengers with an R-value calculated in accordance with the current version of the SPS Code

SOVs With More Than 60 Total Persons

All the requirements are the same as above except for the SPS Code which includes the following:

- i. Requirements are based on the number of persons (includes crew and offshore workers) on board the vessel
- ii. Lifesaving appliances should comply with the requirements contained in Chapter III of SOLAS for passenger ships engaged in international voyages which are not short international voyages
- iii. Fire protection should comply with the requirements of Chapter II-2 of SOLAS for passenger ships carrying not more than 36 passengers
- iv. Subdivision and damage stability should in general be in accordance with Chapter II-1 of SOLAS where the ship is considered a passenger ship and special personnel are considered passengers with an R-value calculated in accordance with the current version of the SPS Code



3.2 HOW IS MINIMUM SAFE MANNING (MSM) FOR SOVS DETERMINED BY THE USCG?

As per 46 CFR and the USCG Marine Safety Manual Volume 3, local USCG inspection offices in the area where the vessel COI is initially issued will determine the minimum safe manning. SOVs are categorized by size (over/under 500 gross register tonnage (GRT) or 6,000 GT (ITC) and route length (over/under 600 nautical miles (nm)).

Additionally, the engineering crew size is dependent upon recognized automation systems (or not) for periodically unattended or minimally attended machinery space designations. A common watch structure is a rotating eight-(8) hour format with three (3) personnel or a rotating 12-hour format with two (2) personnel. Such structure is at the Master's discretion, but the overall navigation/operational manning formats available are limited by the USCG requirements.

The USCG manning information can be found at:

https://www.dco.uscg.mil/Portals/9/NMC/pdfs/regulations_policies/msm.pdf

3.3 WHAT ARE PRIMARY DISTINGUISHING CREW LICENSING ELEMENTS FOR U.S. REGISTERED VESSELS?

SOVs are categorized by size (over/under 6,000 GT ITC), route length (over/under 600 nm), and main propulsion size over/under 3,000 kilowatts (kW)/4,000 horsepower (HP). Senior Deck officers may be licensed as a "Master" with a < 1,600 GRT certification. An Engineering Officer can serve as "Chief Engineer" with a Designated Duty Engineer (DDE) certificate for vessels with main engines under 3,000 kW/4,000 HP.

The USCG mariner licensing information can be found at:

https://www.dco.uscg.mil/Portals/9/NMC/pdfs/regulations_policies/msm.pdf

3.4 ARE THERE UNIQUE U.S. REQUIREMENTS FOR VESSEL STABILITY WHEN CONSIDERING VARIATIONS OF THE SAME BASIC DESIGN (SUCH AS SPS CODE)?

The applicable USCG damage stability criteria is 46 CFR 127.610. Note that this criteria is similar to the SPS Code; however, the calculation of the required “R” value is changed, and the base “R” value is determined by SOLAS as amended.

For intact stability, as the vessels will be obtaining an International LL Certificate, Part A of the IMO Code on Intact Stability shall be used per 46 CFR 170.165. Two stability booklets will be required: one for SPS transit and the other for SOV mode in the offshore wind park.

Criteria for stability are as follows:

1. Intact stability requirements according to IMO Res. MSC.235(82)
2. Weather criterion according to IMO IS Code 2008 Part A Ch.2
3. Damage stability requirements according to deterministic damage calculations as agreed upon in the USCG DBA, for vessels with total onboard persons less than 60. (Note: For more than 60 persons and above 80 meters (m) length, probabilistic damage standard becomes applicable)
4. Certain SOVs have double bottom at B/20 in all areas. This will prevent double bottom damage according to: SOLAS Ch. II-1, Part B-2, Reg 9

The USCG does not currently have formal provisions for alternate damage stability standards during crane operations but proposals for such adoption may be considered and should be addressed in the submitted design basis letter.

3.5 WHEN SMALL SUPPORT VESSELS (DAUGHTER CRAFT) ARE ASSIGNED/ATTACHED TO A MOTHER VESSEL, WHAT ARE THE CERTIFICATION AND REGISTRATION REQUIREMENTS FOR U.S. OPERATION?

The Jones Act requirements address vessel operational limits relative to ship, shore, turbine interactions and the transfer of people, equipment and cargos and apply to daughter craft as they would to any other vessel. The USCG requires independent COI for the daughter vessel under Subchapter L (if the craft is greater than 15 gross tons) or under Subchapter T (if more than six (6) industrial personnel who are not employees of the vessel owner are carried). For non-lifesaving applications, SOLAS or USCG type approval is not required.

Small boat/daughter craft utilized for non-lifesaving applications are subject to Jones Act restrictions regulating domestic content/origins. It can be expected that issuance of a COI by the USCG would be aligned with the appropriate 46 CFR Subchapter L as an offshore support vessel or under Subchapter T as a small passenger craft under 100 GT based on operating characteristics. The use of outboard engines on craft under 24 m is permitted provided the engines are built to a national or international standard.



3.6 HOW ARE U.S. REGULATIONS APPLIED FOR DIESEL ENGINES IN SMALL WORKBOATS (STBS OR SIMILAR)?

The U.S. Environmental Protection Agency (EPA) considered small engines under 600 kW to be high power density (above 35 kW/liter) and have specific emissions rating requirements. Currently, EPA Tier III is normally applicable in the case of small workboat or daughter craft vessels. This is a relaxation of the original legislation for compliance from prior years but is not a permanent status. EPA Tier III engines may be utilized in new construction projects through 2023. In 2024, EPA Tier IV will be required unless the boat manufacturer applies for a waiver as detailed in paragraph D of the EPA final ruling dated Oct. 2, 2020. In brief, it is understood that small workboats/daughter craft will be registered in the U.S. and operated in U.S. territorial waters. As such, each installed engine must follow 40 CFR 1042 and be compliant with the current EPA regulations.

It is important to note that the USCG is not responsible for engine emissions certification. Engine manufacturers and boat builders are instructed to coordinate directly with the EPA for specific questions about applicability.

4. CREW TRANSFER VESSELS (CTVS)

4.1 IS HIGH SPEED CRAFT (HSC) CODE COMPLIANCE REQUIRED FOR U.S. OPERATION OF CREW TRANSFER VESSELS?

The USCG only mandates compliance with 46 CFR Subchapter L as an offshore supply vessel or 46 CFR Subchapter T (crew boat under 100 GRT carrying more than six (6) offshore workers or passengers). The IMO HSC Code is not mandatory for domestic operation, but may be used as an alternative to the domestic regulations upon request to the USCG.

4.2 HAS THE USCG OR OTHER U.S. AUTHORITIES COMMENTED ON PERSONNEL LIFTING AND TRANSFER FROM VESSEL TO VESSEL OR TO TURBINE PLATFORM FROM A SAFETY AND REGULATORY STANDPOINT?

Safe transfer of personnel between vessel and turbine platform is primarily an operational risk element that is controlled through effective safety management practices.



This provides validation to a known standard. The USCG has no specific requirement but is enforcing OSHA regulations that a recognized standard be applied for design and fabrication with regular maintenance and inspection by competent bodies. CTV charterers and operators are looking at various types of crew transfer systems to exchange personnel between the turbine platform and the vessel. These include a heave-compensated winch system mounted on the monopile, a trolley/rail elevator system from the vessel, as well as other methods. Occupational Safety and Health Administration (OSHA) requirements provide basic standards for marine personnel lifting devices. The International Marine Contractors Association (IMCA) guide SEL 025 Rev I, M 202 Rev I is referenced along with American Petroleum Institute (API) 2C for personnel lifting design basis for personnel transfer devices and should be included in the USCG DBA.

Reference to OSHA may be found here:

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1431>



Figure 10: Windserve Odyssey is the first ABS-classed Jones Act CTV.

4.3 UNDER WHAT CONDITIONS ARE BERTHING FOR CREW OR INDUSTRIAL PERSONNEL NECESSARY IN A CTV?

CTVs have various operating modes, endurances and working areas. Some of the design considerations for larger vessels include: more crew and offshore workers are being permitted on board; vessel speed reductions due to National Oceanic and Atmospheric Association (NOAA) Right Whale restrictions, and as such, transit times are increasing. Preventing fatigue and providing a safe working environment for crew and turbine personnel is a priority.

Berthing requirements are connected to maximum duration/length of permitted voyages, the number of watch standers required and the watch schedule being employed to support the safe navigation while also permitting sufficient rest to off-duty crew. 46 CFR Subchapter L 127.280 addresses construction and arrangement of quarters for crew members and accommodations for offshore workers in different sections. On vessels intending to operate more than 24 hours with less than 36 offshore workers, quarters for the crew must be provided and each state room must berth no more than four (4) persons. Designs may have double occupancy cabins, but not to exceed four (4) bunks. In addition, offshore workers must be provided berthing with each state room containing no more than six (6) persons. Designs may have double occupancy cabins, but not to exceed six (6) bunks.

Regarding Subpart F of part 127, there is a requirement for offshore support vessels carrying more than 36 offshore workers. Subchapter L was previously limited to vessels less than 6,000 GT and that carry no more than 36 offshore workers, but the USCG has lifted the restriction. For offshore support vessels less than 6,000 GT ITC that desire to carry more than 36 offshore workers, an equivalency is to be established with the USCG via a design basis agreement.

4.4 IS CREW BERTH/BED ORIENTATION A NECESSARY DESIGN CONSIDERATION?

Based on workboat HAB Notations found within the ABS *Guide for Crew Habitability on Workboats*, Appendix 3 "Accommodation Area Criteria", berths are generally oriented fore and aft. It is noted that with current designs more than 50 percent of berths are oriented in the port/starboard direction. Safety studies supporting transverse orientation may be presented for consideration as an alternative arrangement.





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5. FUTURE DEVELOPMENT: A CALL TO ACTION

ABS understands that as various vessel design solutions are considered for introduction to the U.S. offshore wind market that stakeholders will encounter unique and varied challenges. Members of the maritime community and the offshore wind industry at large are encouraged to continue open and frequent communication as a means of fostering ongoing development.

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