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NVIC 02-17
February 16, 2017

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 02-17

Subj: GUIDELINES ON QUALIFICATION FOR NATIONAL AND STCW
ENGINEERING OFFICER ENDORSEMENTS FOR SERVICE AS CHIEF
ENGINEER ON OFFSHORE SUPPLY VESSELS

Ref: (a) International Convention on Standards of Training, Certification and Watchkeeping
for Seafarers, 1978, as amended (STCW), incorporated into regulations at 46 CFR
11.102

1. PURPOSE. This Navigation and Vessel Inspection Circular (NVIC) provides guidance on qualification for and renewal of national officer and STCW endorsements as Chief Engineer that are limited to service on offshore supply vessels (OSVs).
2. ACTION. The Coast Guard will use this NVIC and Title 46 Code of Federal Regulations (CFR) Sections 11.325 and 11.553 to establish whether mariners are qualified to hold national officer and STCW endorsements authorizing service as engineering officers on OSVs. Officers in Charge, Marine Inspection (OCMIs) should bring this NVIC to the attention of the maritime industry within their zones of responsibility.
3. DIRECTIVES AFFECTED. National Maritime Center (NMC) Policy Letter 7-00 is superseded.
4. BACKGROUND/DISCUSSION.
 - a. The International Maritime Organization (IMO) amended the STCW Convention and STCW Code on June 25, 2010. These amendments entered into force for all ratifying countries, including the United States, on January 1, 2012.
 - b. The Convention is not self-implementing; therefore, the United States, as a signatory to the STCW Convention, initiated regulatory changes to ensure full implementation of the amendments to the STCW Convention and STCW Code. The United States implements

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these provisions under the Convention and under the authority of the United States Code, Titles 33 and 46. The Coast Guard published a final rule in the Federal Register on December 24, 2013 (78 FR 77796) that implements the STCW Convention and STCW Code, including the 2010 amendments. This rule also made changes to qualification requirements for national endorsements, including those for service on OSVs. This rule became effective on March 24, 2014. The Coast Guard is publishing this NVIC to provide guidance on complying with these regulations.

- c. The Coast Guard recognizes the operational requirements of OSVs and that some operations and requirements applicable to other classes of vessels may not apply to OSVs. Using the authority described in 46 CFR 11.201(l); 11.301(f); 11.325(c); and 11.553(d), the Coast Guard has modified some of the requirements for merchant mariner credentials for engineering officers that will be limited to service on OSVs.
 - d. The Coast Guard is extending the period during which mariners may qualify for STCW endorsements limited to service on OSVs under previous regulations and policies until January 1, 2018. Mariners may qualify for national endorsements as Chief Engineer limited to service on OSVs under previous regulations and policies until March 24, 2019. Additional guidance is provided in Enclosure (1).
5. DISCLAIMER. This guidance is not a substitute for applicable legal requirements, nor is it itself a regulation. It is not intended to, nor does it impose legally-binding requirements on any party. It represents the Coast Guard's current thinking on this topic and is issued for guidance purposes to outline methods of best practice for compliance with the applicable law. You can use an alternative approach if the approach satisfies the requirements of the applicable statutes and regulations.
6. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS.
- a. The development of this NVIC and the general policies contained within it have been thoroughly reviewed by the originating office, and are categorically excluded (CE) under current USCG CE # 33 from further environmental analysis, in accordance with Section 2.B.2. and Figure 2-1 of the National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts, COMDTINST M16475.1 (series). Because this NVIC implements, without substantive change, the applicable Commandant Instruction or other federal agency regulations, procedures, manuals, and other guidance documents, Coast Guard categorical exclusion #33 is appropriate.
 - b. This NVIC will not have any of the following: significant cumulative impacts on the human environment; substantial controversy or substantial change to existing environmental conditions; or inconsistencies with any Federal, State, or local laws or administrative determinations relating to the environment. All future specific actions resulting from the general policies in this NVIC must be individually evaluated for compliance with the National Environmental Policy Act (NEPA), DHS and Coast Guard NEPA policy, and compliance with all other environmental mandates.

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7. DISTRIBUTION. No paper distribution will be made of this NVIC. An electronic version will be located at <http://www.uscg.mil/hq/cg5/nvic>.
8. RECORDS MANAGEMENT CONSIDERATIONS. This NVIC has been thoroughly reviewed during the directives clearance process, and it has been determined there are no further records scheduling requirements, in accordance with the Federal Records Act (44 U.S.C. 3101 et seq.), NARA requirements, and the Information and Life Cycle Management Manual, COMDTINST M5212.12 (series). This policy does not create significant or substantial change to existing records management requirements.
9. FORMS/REPORTS. None.
10. REQUEST FOR CHANGES. All requests for changes and questions regarding implementation of this NVIC should be directed to the Mariner Credentialing Program Policy Division (CG-MMC-2), at (202) 372-2357 or MMCPolicy@uscg.mil. To obtain approval for an OSV training and assessment program, contact the NMC at IAAskNMC@uscg.mil or (888) 427-5662

P. F. THOMAS
Rear Admiral, U. S. Coast Guard
Assistant Commandant for Prevention Policy

- Encl: (1) Qualification Requirements for National and STCW Endorsements for Service as Chief Engineer on Offshore Supply Vessels
- (2) Assessment Guidelines for Chief Engineer on Ships Powered by Main Propulsion Machinery of 3,000 kW/4,000 HP Propulsion Power or More Limited to Service on Offshore Supply Vessels
 - (3) Record of Assessment for Chief Engineer on Vessels Powered by Main Propulsion Machinery of 3,000 kW/4,000 HP or More Limited to Service on Offshore Supply Vessels

**QUALIFICATION REQUIREMENTS FOR NATIONAL AND STCW
ENDORSEMENTS FOR SERVICE AS CHIEF ENGINEER FOR SERVICE ON
OFFSHORE SUPPLY VESSELS**

1. GENERAL. This enclosure provides guidance to qualify for national and STCW endorsements for service as Chief Engineer on offshore supply vessels (OSVs).
2. NATIONAL ENDORSEMENT. The national endorsement of Chief Engineer (OSV) will be issued without tonnage limitations. This endorsement authorizes service on OSVs of any tonnage, subject to any propulsion power and propulsion mode limitations on the endorsement.
 - a. Sea service. As specified in 46 CFR 11.553(a), the service required to qualify for a national officer endorsement as Chief Engineer (OSV) is 4 years of total service in the engine room of vessels. One year of this service must have been as an engineer officer while holding an engineer officer endorsement. Two years of the service must have been as a qualified member of the engine department or equivalent position.
 - b. Training. To qualify for a national officer endorsement as Chief Engineer (OSV), mariners must provide evidence of successful completion of the following training:
 - 1) First Aid and Cardiopulmonary Resuscitation (CPR) (46 CFR 11.201(i)). If this training was completed more than 1 year before the date of application, the applicant must provide evidence of maintaining the standard of competence as specified in 46 CFR 11.302(b); and
 - 2) Basic and Advanced Firefighting (46 CFR 11.201(h)(2)(v)). This training must have been completed within the past 5 years, or if it was completed more than 5 years before the date of application, the applicant must provide evidence of maintaining the standard of competence as specified in 46 CFR 11.302(b) and 11.303(b).
 - c. Propulsion modes. Mariners may qualify for specific propulsion modes under the general requirements applicable to all national engineer officer endorsements specified in 46 CFR 11.502.
 - d. Propulsion power. As specified in 46 CFR 11.553(b), if an applicant has not obtained at least 50 percent of the required experience on vessels of 3,000 kW/4,000 HP or more, a propulsion power limitation will be placed on the endorsement based on the applicant's qualifying experience. When the limitation equals or exceeds 7,500 kW/10,000 HP, an endorsement for unlimited propulsion power will be issued. Propulsion power limitations may be removed in accordance with 46 CFR 11.503.
3. STCW ENDORSEMENT.
 - a. As specified in 46 CFR 11.301(f)(1) and 11.325(c), the Coast Guard may exempt an applicant from meeting any individual knowledge, understanding, and proficiency required in Section A-III/2 of the STCW Code. Under this authority, mariners may qualify for an STCW endorsement as Chief Engineer on Vessels Powered by Main

Propulsion Machinery of 3,000 kW/4,000 HP or More with a limitation to service on OSVs by providing the evidence highlighted below:

- 1) Sea service. Not less than 36 months of service as officer in charge of an engineering watch (OICEW) on ships powered by main propulsion machinery of 750 kW/1,000 HP propulsion power or more. This period may be reduced to not less than 24 months if the applicant has served for not less than 12 months as second engineer officer on ships powered by propulsion machinery of 3,000 kW/4,000 HP or more (46 CFR 11.325(a)(1));
 - 2) Standard of competence. Meeting the standard of competence in Section A-III/2 of the STCW Code (incorporated by reference, see 46 CFR 11.102) as applicable to OSVs. The assessment guidelines in Enclosure (2) may be used for this purpose;
 - 3) Training. Successful completion of approved training or Coast Guard-accepted training for:
 - A) Engineroom Resource Management (ERM), if not completed previously;
 - B) Leadership and Managerial Skills; and
 - C) Management of Electrical and Electronic Control Equipment; and
 - 4) Meeting the standard of competence for Basic Training (46 CFR 11.302) and Advanced Firefighting (46 CFR 11.303). If this training was completed more than 5 years before the date of application, the applicant must provide evidence of maintaining the standard of competence as specified in 46 CFR 11.302(b) and 11.303(b).
- b. To remove the limitation to OSVs, mariners must meet all requirements for an endorsement as Chief Engineer without a limitation to OSVs in 46 CFR 11.325. This will require the mariner to complete the tasks in NVIC 15-14 that are not included or are identified as specific to OSVs in Enclosure (2) of this NVIC.
- c. Operational-level training and assessments are not required if a mariner holds or has previously held any STCW 95 endorsement as OICEW (46 CFR 11.301(g)(4)). Mariners who have not held an STCW endorsement as OICEW must also meet the requirements for qualification as OICEW.
4. GRANDFATHERING.
- a. Mariners who hold national and STCW endorsements as Chief Engineer limited to OSVs of not more than 500 GRT/3,000 GT or not more than 500 GRT/6,000 GT based on the statutory limits on OSVs before October 15, 2010, will have the OSV tonnage limitations removed on their next credential transaction. The limitation on the STCW endorsement restricting it to service on OSVs will remain, unless the mariner meets all requirements for an endorsement that is not restricted to OSVs. Any propulsion power or propulsion mode limitations will also remain.

- b. Mariners who hold national and STCW endorsements for Chief Engineer (OSV) limited to near-coastal domestic voyages will have this limitation removed on their next credential transaction. The limitation on the STCW endorsement restricting it to service on OSVs will remain, unless the mariner meets all requirements for an endorsement that is not restricted to service on OSVs.
- c. Mariners may continue to qualify under previous regulations and policy as follows:

- 1) Mariners may qualify for a national officer endorsement as Chief Engineer (OSV) until March 24, 2019, by holding or qualifying for a national endorsement Chief Engineer (Limited) based on service and/or training that began before March 24, 2014. It is not necessary to have held an endorsement as Chief Engineer (Limited) before March 24, 2014, it is only necessary to have begun the service or training for that endorsement before that date. No further service, examination, or training for Chief Engineer (OSV) is required.

Mariners may qualify for a national endorsement as Chief Engineer (OSV) until March 24, 2019, by holding or qualifying for any national endorsement as Designated Duty Engineer (DDE) based on service and/or training that began before March 24, 2019. No further service or training for Chief Engineer (OSV) is required. The endorsement as Chief Engineer (OSV) will have the same propulsion power limitations as the DDE endorsement for which the mariner holds or qualifies.

- 2) Mariners may qualify for an STCW endorsement as Chief Engineer with a limitation to service on OSVs until January 1, 2018, by holding or qualifying for a national endorsement as Chief Engineer (Limited), Designated Duty Engineer (DDE) Less Than 4,000 HP/3,000 kW, or DDE Unlimited Propulsion Power, and providing evidence of completion of the following:
 - A) Basic Training. If this training was completed more than 5 years before the date of application, the applicant must provide evidence of maintaining the standard of competence;
 - B) Advanced Firefighting. If this training was previously completed for another endorsement it need not be re-taken. Holding an endorsement that required this training will be satisfactory evidence that the training was completed; and
 - C) Approved assessment program for Chief Engineer (OSV).

- d. In order to remove a limitation to OSVs from an STCW endorsement for Chief Engineer, mariners must meet all requirements in 46 CFR 11.325 or 11.331, as appropriate, that were not met previously. This will include completion of all assessments from NVIC 15-14 for any task identified in Enclosure (2) of this NVIC as being specific to OSVs; and if not met previously, completion of approved training for:

- 1) Leadership and Managerial Skills;
- 2) Management of Electrical and Electronic Control Equipment; and

3) ERM.

5. RENEWAL OF ENDORSEMENTS.

- a. To renew a national officer endorsement, mariners must meet the applicable requirements in 46 CFR 10.227.
- b. To renew an STCW endorsement as Chief Engineer mariners must meet the applicable requirements to renew their national endorsements in 46 CFR 10.227 and provide evidence of:
 - 1) Completion of approved or accepted training for:
 - A) Leadership and Managerial Skills;
 - B) Management of Electrical and Electronic Control Equipment; and
 - C) ERM, if not completed previously;
 - 2) Maintaining the standard of competence for Basic Training (46 CFR 11.302(b)) and Advanced Firefighting (46 CFR 11.303(b)); and
 - 3) Seafarers serving as Lifeboatman must also provide evidence of maintaining the standard of competence for Proficiency in Survival Craft (46 CFR 12.613) or Proficiency in Survival Craft-Limited (46 CFR 12.615), as appropriate.

Assessment Guidelines for Chief Engineer Officers and Second Engineer Officers on Ships Powered by Main Propulsion Machinery of 3,000 kW/4,000 HP Propulsion Power or More Limited to Offshore Supply Vessels

As specified in 46 CFR 11.325(a)(2) and 11.327(a)(2), every candidate for an endorsement as Chief Engineer Officer and Second Engineer Officer on Ships Powered by Main Propulsion Machinery of 3,000 kW/4,000 HP Propulsion Power or More, including an endorsement that is limited to service on offshore supply vessels (OSVs), must provide evidence of having achieved the required standard of competence specified in Table A-III/2 of the STCW Code. The table below is adopted from Table A-III/2 of the STCW Code to assist the candidate and assessor in the demonstration of competency.

Practical Demonstrations of Skills

These assessment guidelines establish the conditions under which the assessment will occur, the performance or behavior the candidate is to accomplish, and the standards against which the performance is measured. In addition, for the assessments in this enclosure, the unique requirements of different manufacturers for operating, maintenance, and repair; the different generations and configurations of systems; and the specific nature of the shipboard installation do not permit the development of detailed performance criteria. As a result, many of the criteria in these guidelines call for direct reference to the manufacturers' instructions, recommendations, and specifications or the ship's standard operating procedures, to determine whether the candidate's actions were appropriate, complete, timely, and executed in the proper sequence.

Qualified Assessors

A shipboard Qualified Assessor (QA) who witnesses a practical assessment may sign the appropriate blocks and pages in the Record of Assessment in Enclosure (3) or an equivalent record. All assessments must be signed by a qualified assessor approved by the Coast Guard in accordance with 46 CFR 10.405. In order to facilitate the transition to this new requirement, the Coast Guard will accept assessments that have been demonstrated in the presence of, and signed by, an assessor who has not been Coast Guard approved until December 31, 2017, provided that the assessor meets the professional requirements in 46 CFR 10.405(a)(3) to assess competence for the specific endorsement. Assessors must be in possession of the level of endorsement, or other professional credential, which provides proof that he or she has attained a level of experience and qualification equal or superior to the relevant level of knowledge, skills, and abilities to be assessed (46 CFR 10.405(a)(3)). In the interim, the Coast Guard will accept assessments signed by mariners who hold an appropriate national endorsement and have at least 1 year of experience as Chief Engineer, Second Engineer Officer, or national First Assistant Engineer on seagoing vessels of at least 3,000 kW (4,000 HP). After December 31, 2017, QAs must be approved by the National Maritime Center (46 CFR 10.405). Qualified military personnel need not be approved QA's and may continue to sign assessments after December 31, 2017.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Enclosure (2) to NVIC 02-17

Notes: The following notes are used in the “Task No.” column of the assessment table that follows:

All The assessment is required for all propulsion modes.

Motor The assessment is required for an endorsement valid for motor propelled vessels.

Steam The assessment is required for an endorsement valid for steam propelled vessels.

GT The assessment is required for an endorsement valid for gas turbine propelled vessels.

OSV The assessment is specific to OSVs, and another assessment of the knowledge, understanding and proficiency (KUP) is needed for an endorsement that is not limited to OSVs. For an endorsement that will be limited to OSVs, the identically numbered assessment from NVIC 15-14 for the endorsement that is not limited to OSVs may be substituted for this assessment.

Note 1 This assessment is the same or equivalent to one for an endorsement that is not limited to OSVs, and need not be repeated to remove the limitation.

Course The KUP is demonstrated by the successful completion of the specified Coast Guard approved or accepted course.

Numbering gaps in the sequence of assessments are intentional to allow easy correlation to corresponding assessments for endorsements that are not limited to OSVs.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Assessment Guidelines for Chief Engineer Officers and Second Engineer Officers on Ships Powered by Main Propulsion Machinery of 3,000 kW/4,000 HP Propulsion Power or More Limited to Offshore Supply Vessels

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.1.A <i>Motor Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Diesel Engine Propulsion Plant	On a vessel powered by diesel propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs preparing a motor propulsion plant for service.	The candidate directs the main propulsion plant to be made ready for seagoing operations by: <ol style="list-style-type: none"> 1. Ensuring that auxiliary machinery is operating within manufacturer's specifications; 2. Contacting the bridge watch officer and arranging for the testing of steering gear and the main engine; 3. Testing the main propulsion engine(s) for proper start and direction; 4. Ensuring that all pre-operational checks are performed and satisfactory results are obtained; 5. Transferring control of the propulsion engines to the bridge (if fitted for bridge control); 6. Preparing the plant for start-up using the most appropriate methods and in accordance with manufacturer specifications; 7. Ensuring that propulsion plant performance is verified and checked in relation to bridge commands and technical specifications; and 8. Ensuring compliance with all international and domestic regulatory requirements.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Enclosure (2) to NVIC 02-17

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
<p>1.1.B <i>Motor Note 1</i></p>	<p>Manage the operation of propulsion plant machinery</p>	<p>Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Diesel Engine Propulsion Plant</p>	<p>On a vessel powered by diesel propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,</p>	<p>the candidate directs operating a motor propulsion plant in maneuvering mode.</p>	<p>The candidate directs performance main propulsion plant maneuvering operations as directed by the Bridge by ensuring that:</p> <ol style="list-style-type: none"> 1. All auxiliary machinery is operating within acceptable limits and parameters; 2. The main propulsion engine(s) react properly to requests for changes in speed and direction; 3. All temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications; and 4. Plant performance is verified and checked in relation to bridge commands and technical specifications.
<p>1.1.C <i>Motor Note 1</i></p>	<p>Manage the operation of propulsion plant machinery</p>	<p>Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Diesel Engine Propulsion Plant</p>	<p>On a vessel powered by diesel propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,</p>	<p>the candidate directs operating a motor propulsion plant at full sea speed.</p>	<p>The candidate directs the main propulsion plant to be brought to full sea speed operations by:</p> <ol style="list-style-type: none"> 1. Ensuring that the main propulsion engine(s) speed is increased at a rate in accordance with manufacturer's specifications upon receiving direction from the Bridge Watch Officer; 2. Ensuring that all temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications; 3. Directing that ancillary equipment be brought on line in accordance with manufacturer's directions and operational requirements; and 4. Ensuring that propulsion plant performance is verified and checked in relation to bridge commands and technical specifications.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.1.D <i>Motor Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Diesel Engine Propulsion Plant	On a vessel powered by diesel propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs shutting down and securing a motor propulsion plant.	The candidate directs that the main propulsion plant be secured from seagoing or maneuvering operations to port operations by: <ol style="list-style-type: none"> 1. Ensuring that all temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications for port operations; 2. Securing all main propulsion machinery safely and in accordance with manufacturer's instructions and company procedures; 3. Directing that ancillary and auxiliary equipment be secured safely in accordance with manufacturer's directions and operational requirements; and 4. Preparing the plant for shut-down using the most appropriate methods and in accordance with manufacturer specifications.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must be approved by the National Maritime Center before use.

Enclosure (2) to NVIC 02-17

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.2.A <i>Steam Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Steam Propulsion Plant	On a vessel powered by steam propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs preparing a steam propulsion plant for service.	The candidate directs that the main propulsion plant be made ready for seagoing operations by: <ol style="list-style-type: none"> 1. Ensuring that the main boiler(s) have the appropriate firing capabilities and are at recommended temperature(s) and pressure(s); 2. Ensuring that all necessary auxiliary machinery is operating within manufacturer's specifications; 3. Contacting the bridge watch officer and arranging for the testing of steering gear and the main engine; 4. Testing the main propulsion engine(s) for proper start and direction; 5. Ensuring that all pre-operational checks are performed and satisfactory results are obtained; 6. Transferring control of the propulsion engines to the bridge (if fitted for bridge control); 7. Preparing the plant for start-up using the most appropriate methods and in accordance with manufacturer specifications; 8. Ensuring that propulsion plant performance is verified and checked in relation to bridge commands and technical specifications; and 9. Ensuring compliance with all international and domestic regulatory requirements.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.2.B <i>Steam Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Steam Propulsion Plant	On a vessel powered by steam propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs operating a steam propulsion plant in maneuvering mode.	The candidate directs the performance of main propulsion plant maneuvering operations as directed by the Bridge by ensuring that: <ol style="list-style-type: none"> 1. Auxiliary machinery is operating within acceptable limits and parameters; 2. Main propulsion engine(s) react properly to requests for changes in speed and direction; 3. Temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications; 4. Main boiler(s) operating pressure(s) and water level(s) are within recommended operational limits; and 5. Propulsion plant performance is verified and checked in relation to bridge commands and technical specifications.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Enclosure (2) to NVIC 02-17

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.2.C <i>Steam Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Steam Propulsion Plant	On a vessel powered by steam propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs operating a steam propulsion plant at full sea speed.	The candidate directs the main propulsion plant to be brought to full sea speed operations, including: <ol style="list-style-type: none"> 1. Operating the main boiler(s) at the appropriate firing rate(s), pressure(s), and efficiency as required by operational necessity; 2. Main propulsion engine(s) speed is/are increased at a rate in accordance with manufacturer's specifications upon receiving direction from the Bridge Watch Officer; 3. Temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications; 4. Ancillary equipment, such as distillers, are brought on line in accordance with manufacturer's directions and operational requirements; and 5. Propulsion plant performance is verified and checked in relation to bridge commands and technical specifications.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.2.D <i>Steam Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Steam Propulsion Plant	On a vessel powered by steam propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs shutting down and securing a steam propulsion plant.	The candidate directs that the main propulsion plant be secured from seagoing or maneuvering operations to port operations, including: <ol style="list-style-type: none"> 1. Main boiler(s) is operated at the appropriate firing rate(s), pressure(s), and efficiency as required to maintain port operation; 2. Engine control is transferred to the engine room upon bridge's signal for FWE; 3. Temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications for port operations; 4. Main propulsion machinery is secured safely in accordance with manufacturer's instructions and the vessel's operational procedures; and 5. Ancillary and auxiliary equipment is secured safely in accordance with manufacturer's directions and operational requirements.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.3.A <i>GT</i> <i>Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Gas Turbine Propulsion Plant	On a vessel powered by gas turbine propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs preparing a gas turbine propulsion plant for service.	The candidate directs the procedures for making the main propulsion plant to be ready for seagoing operations by: <ol style="list-style-type: none"> 1. Operating all necessary auxiliary machinery within manufacturer's specifications; 2. Contacting the bridge watch officer and arranging for the testing of gear and the main engine; 3. Testing the main propulsion engine(s) for proper start and direction; 4. Performing pre-operational checks with satisfactory results; 5. Transferring control of the propulsion engines to the bridge (if fitted for bridge control); 6. Preparing the plant for start-up using the most appropriate methods and in accordance with manufacturer specifications; 7. Ensuring that propulsion plant performance is verified and checked in relation to bridge commands and technical specifications; and 8. Complying with all international and domestic regulatory requirements.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.3.B <i>GT Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Gas Turbine Propulsion Plant	On a vessel powered by gas turbine propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs operating a gas turbine propulsion plant in maneuvering mode.	The candidate directs that main propulsion plant maneuvering operations be performed as directed by the Bridge by ensuring that: <ol style="list-style-type: none"> 1. Auxiliary machinery is operating within acceptable limits and parameters; 2. Main propulsion engine(s) react properly to requests for changes in speed and direction; 3. Temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications ensuring plant performance is verified; and 4. Plant performance is verified and checked in relation to bridge commands and technical specifications.
1.3.C <i>GT Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Gas Turbine Propulsion Plant	On a vessel powered by gas turbine propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs operating a gas turbine propulsion plant at full sea speed.	The candidate directs the main propulsion plant to be brought to full sea speed operations, including: <ol style="list-style-type: none"> 1. Ensuring that the main propulsion engine(s) speed is/are increased at a rate in accordance with manufacturer's specifications upon receiving direction from the Bridge Watch Officer; 2. Temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications; 3. Ancillary equipment, such as distillers, are brought on line in accordance with manufacturer's directions and operational requirements; and 4. Propulsion plant performance is verified and checked in relation to bridge commands and technical specifications.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
1.3.D <i>GT</i> <i>Note 1</i>	Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Gas Turbine Propulsion Plant	On a vessel powered by gas turbine propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs shutting down and securing a gas turbine propulsion plant.	The candidate directs that the main propulsion plant be secured from seagoing or maneuvering operations to port operations, including: <ol style="list-style-type: none"> 1. Engine control is transferred to the engine room upon bridge signal for FWE; 2. Temperatures, pressures, flows, and other measured operating parameters are within manufacturer's specifications for port operations; 3. Main propulsion machinery is secured safely in accordance with manufacturer's instructions and company protocols; 4. Ancillary and auxiliary equipment is secured safely in accordance with manufacturer's directions and operational requirements; and 5. Preparing the plant for shut-down using the most appropriate methods and in accordance with manufacturer specifications.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
2.1.A <i>All OSV</i>	Plan and schedule operations	<p>Thermodynamics and heat transmission</p> <p>Mechanics and hydromechanics</p> <p>Propulsive characteristics of diesel engines, steam and gas turbines, including speed, output and fuel consumption</p> <p>Heat cycle, thermal efficiency and heat balance</p> <p>Refrigerators and refrigeration cycle</p> <p>Physical and chemical properties of fuels and lubricants</p> <p>Technology of materials</p> <p>Naval architecture and ship construction, including damage control</p>	On a vessel powered by main propulsion machinery at least 4,000 HP, or in a laboratory, and given specifications and characteristics for the propulsion plant and auxiliary systems for a vessel powered by main propulsion machinery of 4,000 HP or more,	the candidate plans and prepares operations suited to the design parameters of the power installation and to the requirements of the voyage.	<p>The candidate creates a plan and schedule for the following vessel operations:</p> <ol style="list-style-type: none"> 1. Plant operations, including: <ol style="list-style-type: none"> a. Maneuvering; b. Arrival; and c. Departure; 2. Bunkering operations, including: <ol style="list-style-type: none"> a. Pre-Bunker Preparations; b. Loading Plan; and c. Securing; 3. Port stay, including: <ol style="list-style-type: none"> a. Scheduled Maintenance; and b. Watch Functions; 4. Voyage calculations for: <ol style="list-style-type: none"> a. Fuel consumption; b. Fuel on Board; c. Fuel Order; and d. Propeller slip; 5. Engine room emergency drills, including: <ol style="list-style-type: none"> a. Blackout; b. Fire; c. Man Down; d. Damage Control; and e. Loss of steering; and 6. Fuel and lube oil sampling.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
<p>3.1.A</p> <p><i>Motor Note 1</i></p>	<p>Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery</p>	<p>Start up and shut down main propulsion and auxiliary machinery, including associated systems</p> <p>Operating limits of propulsion plant</p> <p>The efficient operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery</p> <p>Functions and mechanism of automatic control for main engine</p>	<p>On a vessel powered by diesel propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,</p>	<p>the candidate directs the operations of a diesel propulsion plant using methods of measuring and calculating propulsion plant load and heat distribution that are the most appropriate and in accordance with manufacturer specifications.</p>	<p>The candidate directs the operations of a diesel propulsion plant so that performance levels and plant loads are maintained within specified ranges, operating parameters and manufacturer prescribed limits by:</p> <ol style="list-style-type: none"> 1. Performing propulsion plant operations at recommended levels and adjusting operations to ensure continued operation within recommended ranges and technical specifications; 2. Evaluating propulsion plant performance data, determining the immediate condition of the propulsion system and ensuring the most efficient operation possible; 3. Measuring and calculating plant loads, heat distribution and heat transfer efficiency; 4. Monitoring the main propulsion plant operation sufficient to maintain safe operating conditions; and 5. Maintaining performance levels within recommended operating parameters and technical specifications.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
3.2.A <i>Steam Note 1</i>	Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery	<p>Start up and shut down main propulsion and auxiliary machinery, including associated systems</p> <p>Operating limits of propulsion plant</p> <p>The efficient operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery</p> <p>Functions and mechanism of automatic control for main engine</p>	On a vessel powered by steam propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs the operations of a steam propulsion plant using methods of measuring and calculating propulsion plant load and heat distribution that are the most appropriate and in accordance with manufacturer specifications.	<p>The candidate directs the operations of a steam propulsion plant so that performance levels and plant loads are maintained within specified ranges, operating parameters and manufacturer prescribed limits by:</p> <ol style="list-style-type: none"> 1. Performing propulsion plant operations at recommended levels and adjusting operations to ensure continued operation within recommended ranges and technical specifications; 2. Executing and recording propulsion plant performance analysis, determining the immediate condition of the propulsion system and ensuring the most efficient operation possible; 3. Measuring and calculating plant loads, heat distribution and heat transfer efficiency; 4. Monitoring the main propulsion plant operation sufficient to maintain safe operating conditions; and 5. Maintaining performance levels within recommended operating parameters and technical specifications.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
3.3.A <i>GT</i> <i>Note 1</i>	Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery	Start up and shut down main propulsion and auxiliary machinery, including associated systems Operating limits of propulsion plant The efficient operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery Functions and mechanism of automatic control for main engine	On a vessel powered by gas turbine propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions and systems,	the candidate directs the operations of a gas turbine propulsion plant using methods of measuring and calculating propulsion plant load and heat distribution that are the most appropriate and in accordance with manufacturer specifications.	The candidate directs the operations of a gas turbine propulsion plant so that performance levels and plant loads are maintained within specified ranges, operating parameters and manufacturer prescribed limits by: <ol style="list-style-type: none"> 1. Performing propulsion plant operations at recommended levels and adjusting operations to ensure continued operation within recommended ranges and technical specifications; 2. Executing and recording propulsion plant performance analysis, determining the immediate condition of the propulsion system and ensuring the most efficient operation possible; 3. Measuring and calculating plant loads, heat distribution and heat transfer efficiency; 4. Monitoring the main propulsion plant operation sufficient to maintain safe operating conditions; and 5. Maintaining performance levels within recommended operating parameters and technical specifications.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
3.4.A <i>All OSV</i>	Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery	<p>Functions and mechanism of automatic control for auxiliary machinery including but not limited to:</p> <ul style="list-style-type: none"> .1 Generator distribution systems .2 Steam boilers .3 Oil purifier .4 Refrigeration system .5 Pumping and piping systems .6 Steering gear system <p>Cargo-handling equipment and deck machinery</p>	On a vessel powered by main propulsion machinery of at least 4,000 HP, or a simulator capable of replicating shipboard auxiliary equipment and systems,	the candidate directs the operations of auxiliary and ancillary machinery and systems using methods of measuring and calculating plant load that are the most appropriate and in accordance with manufacturer specifications.	<p>The candidate directs the operations of auxiliary and ancillary machinery and systems so that performance levels and plant loads are maintained within specified ranges, operating parameters and manufacturer prescribed limits by:</p> <ol style="list-style-type: none"> 1. Performing a thorough inspection and evaluation of all auxiliary and ancillary systems, machinery and equipment operations; and 2. Comparing operational data to manufacturer's recommended technical specifications and operational limits. <p>System operation should include:</p> <ol style="list-style-type: none"> 1. Electrical generation and distribution system and machinery; 2. Liquid centrifugal purification system and/or filter system and machinery; 3. Refrigeration and HVAC systems and machinery; 4. Bilge and ballast transfer system and machinery; 5. Vessel steering system and machinery; and 6. Cargo handling system and machinery.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
3.5.A <i>All OSV</i>	Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery	<p>The efficient operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery</p> <p>Functions and mechanism of automatic control for auxiliary machinery</p>	On a vessel powered by main propulsion machinery of at least 4,000 HP, or in an engineering laboratory using equipment commonly fitted aboard OSVs,	the candidate directs the operations of auxiliary and ancillary machinery and systems relative to hotel operations using methods of measuring and calculating plant load that are the most appropriate and in accordance with manufacturer specifications.	<p>The candidate directs the operations of auxiliary and ancillary machinery and systems relative to hotel operations so that performance levels and plant loads are maintained within specified ranges, operating parameters and manufacturer prescribed limits by:</p> <ol style="list-style-type: none"> 1. Performing a thorough inspection and evaluation of all auxiliary and ancillary systems, machinery and equipment operations; and 2. Comparing operational data to manufacturer's recommended technical specifications and operational limits. <p>System operations should include:</p> <ol style="list-style-type: none"> 1. Fire fighting systems and equipment; 2. Accommodation heating; 3. Air conditioning and ventilation; 4. Sanitary systems and equipment; 5. Potable systems and equipment; 6. Sewage treatment systems and equipment; 7. Galley equipment, vent dampers; 8. Laundry equipment; 9. Communication systems and devices; and 10. Entertainment systems and equipment.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
4.1.A <i>All Note 1</i>	Manage fuel, lubrication and ballast operations	Operation and maintenance of machinery, including pumps and piping systems	On a vessel powered by main propulsion machinery of at least 4,000 HP, or a suitable liquid cargo simulator,	the candidate manages and directs the transfer of fuels, liquid lubricants in bulk and bilge and ballast water.	The candidate manages and directs fuel and lubrication, ballast water, and bilge water transfer operations to ensure prevention of pollution of the marine environment, adhering to domestic and international laws, and meeting operational requirements.
5.1.A <i>Motor Note 1</i>	Manage the operation of electrical, electronic and control equipment	Marine electro-technology, electronics, power electronics, automatic control engineering and safety devices Design features and system configurations of automatic control equipment and safety devices	On a vessel powered by diesel propulsion machinery of 4,000 HP or more, or a simulator capable of replicating all propulsion plant functions, instrumentation, and control devices,	The candidate directs the operation of diesel propulsion plant electrical and electronic equipment and systems.	The candidate ensures that all electrical, electronic and automatic instrumentation and control devices are operating within manufacturer's guidelines and technical specifications by testing: <ol style="list-style-type: none"> 1. Emergency action input devices for proper operation at appropriate set-points; 2. Remote and local controls for proper operation; and 3. Alarm functions and input devices for proper operation at appropriate set points. Equipment used for this assessment should include: <ol style="list-style-type: none"> 1. Remote and local controls; 2. Automatic shutdowns; 3. Automatic slowdowns; 4. Starting permissives; 5. Override functions; and 6. Alarm functionality.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
5.1.B <i>Steam Note 1</i>	Manage the operation of electrical, electronic and control equipment	Marine electro-technology, electronics, power electronics, automatic control engineering and safety devices Design features and system configurations of automatic control equipment and safety devices	On a vessel powered by steam propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions, instrumentation, and control devices,	the candidate directs the operation of steam propulsion plant electrical and electronic equipment and systems.	The candidate ensures that electrical, electronic and automatic instrumentation and control devices are operating within manufacturer’s guidelines and technical specifications by testing: <ol style="list-style-type: none"> 1. Emergency action input devices for proper operation at appropriate set-points; 2. Remote and local controls for proper operation; and 3. Alarm functions and input devices for proper operation at appropriate set points. Equipment used for this assessment should include: <ol style="list-style-type: none"> 1. Remote and local controls; 2. Automatic shutdowns; 3. Burner management system; 4. Light-off permissives; 5. Override functions; and 6. Alarm functionality.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
5.1.C <i>GT</i> <i>Note 1</i>	Manage the operation of electrical, electronic and control equipment	Marine electro-technology, electronics, power electronics, automatic control engineering and safety devices Design features and system configurations of automatic control equipment and safety devices	On a vessel powered by gas turbine propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions, instrumentation, and control devices,	the candidate directs the operation of gas turbine propulsion plant electrical and electronic equipment and systems.	The candidate ensures that electrical, electronic and automatic instrumentation and control devices are operating within manufacturer's guidelines and technical specifications by testing: 1. Emergency action input devices for proper operation at appropriate set-points; 2. Remote and local controls for proper operation; and 3. Alarm functions and input devices for proper operation at appropriate set points. Equipment used for this assessment should include: 1. Remote and local controls; 2. Automatic shutdowns; 3. Fuel supply and ignition sequencing; 4. Start permissives; 5. Override functions; and 6. Alarm functionality.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
5.1.D <i>All Note 1</i>	Manage the operation of electrical, electronic and control equipment	Marine electro-technology, electronics, power electronics, automatic control engineering and safety devices Design features and system configurations of automatic control equipment and safety devices	On a vessel powered by main propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions, instrumentation, and control devices,	the candidate directs the operation of electrical and electronic equipment and systems relative to power generation.	The candidate ensures that electrical, electronic and automatic instrumentation and control devices relative to power generation, distribution and management systems are operating within manufacturer’s guidelines and technical specifications by testing: <ol style="list-style-type: none"> 1. Emergency action input devices for proper operation at appropriate set-points; 2. Remote and local controls for proper operation; and 3. Alarm functions and input devices for proper operation at appropriate set points. Equipment used for this assessment should include: <ol style="list-style-type: none"> 1. Remote and local controls; 2. Automatic shutdowns; 3. Generator protection; 4. High voltage system equipment and controls; 5. Operating modes; 6. Power management functions; and 7. Alarm functionality.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
5.1.E <i>All Note 1</i>	Manage the operation of electrical, electronic and control equipment	Marine electro-technology, electronics, power electronics, automatic control engineering and safety devices Design features and system configurations of automatic control equipment and safety devices	On a vessel powered by main propulsion machinery of at least 4,000 HP, or a simulator capable of replicating all propulsion plant functions, instrumentation, and control devices,	the candidate directs the operation of electrical and electronic equipment relative to electro-hydraulic and electro-pneumatic control systems.	The candidate ensures that electrical, electronic and automatic instrumentation and control devices relative to electro-hydraulic and electro-pneumatic systems are operating within manufacturer's guidelines and technical specifications by testing: 1. Emergency action input devices for proper operation at appropriate set-points; 2. Remote and local controls for proper operation; and 3. Alarm functions and input devices for proper operation at appropriate set points. Equipment used for this assessment should include: 1. Remote and local valve controls; 2. Remote sensing instrumentation; 3. Alarm functionality; and 4. Propulsion control equipment.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
6.1.A <i>All Note 1</i>	Manage troubleshooting, restoration of electrical and electronic control equipment to operating condition	Troubleshooting of electrical and electronic control equipment Function test of electrical, electronic control equipment and safety devices Troubleshooting of monitoring systems Software version control	On a vessel powered by main propulsion machinery of at least 4,000 HP, or in a laboratory with electrical equipment capable of replicating the troubleshooting process,	the candidate directs that personnel use safe working practices for shipboard electrical systems, that test equipment and tools are properly selected, and that proper repair and maintenance procedures are followed.	The candidate ensures that troubleshooting, testing and repair procedures relative to electrical and electronic equipment are performed safely by: <ol style="list-style-type: none"> 1. Troubleshooting electrical and electronic control equipment through the proper use of test equipment leading to the restoration of normal functionality; 2. Performing proper functionality tests on electrical, electronic control equipment and safety devices, as part of a troubleshooting procedure and restoration protocol; 3. Troubleshooting monitoring system and equipment through the proper use of test equipment leading to the restoration of normal functionality; and 4. Properly operating electrical, and electronic control equipment and safety devices related to computer application and software version control.
7.1.A <i>Motor OSV</i>	Manage safe and effective maintenance and repair procedures	Management techniques of maintenance and repair procedures related to main propulsion and auxiliary / ancillary machinery and equipment	On a vessel powered by diesel propulsion machinery of at least 4,000 HP, or in a laboratory, or on a simulator capable of replicating all maintenance and repair functions,	the candidate directs the proper performance of motor propulsion plant repairs.	The candidate directs the maintenance procedures employed on motor vessel propulsion and supporting auxiliary equipment to be performed in the safest, most efficient way by: <ol style="list-style-type: none"> 1. Utilizing instruction manuals and manufacturer publications for repair and maintenance procedures; 2. Performing repairs in accordance with manufacturer's guidelines and technical specifications; and 3. Performing repairs using the correct tools and spare parts.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
7.1.B <i>Steam Note 1</i>	Manage safe and effective maintenance and repair procedures	Management techniques of maintenance and repair procedures related to main propulsion and auxiliary / ancillary machinery and equipment	On a vessel powered by steam propulsion machinery at least 4,000 HP, or in a laboratory, or on a simulator capable of replicating all maintenance and repair functions,	the candidate directs the proper performance of steam propulsion plant repairs.	<p>The candidate directs the performance of maintenance on steam vessel propulsion and supporting auxiliary equipment in the safest, most efficient way by:</p> <ol style="list-style-type: none"> 1. Utilizing instruction manuals and manufacturer publications for repair and maintenance procedures; 2. Performing repairs in accordance with manufacturer's guidelines and technical specifications; and 3. Performing repairs using the correct tools and spare parts. <p>Procedures used for this assessment should include:</p> <ol style="list-style-type: none"> 1. Burner maintenance; 2. Firesides maintenance; 3. Steam drum appurtenance overhaul; 4. Water treatment; 5. Reduction gear inspection; and 6. Axial position of the HP/LP turbines.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
7.1.C <i>GT</i> <i>Note 1</i>	Manage safe and effective maintenance and repair procedures	Management techniques of maintenance and repair procedures related to main propulsion and auxiliary / ancillary machinery and equipment	On a vessel powered by gas turbine propulsion machinery of at least 4,000 HP, in a laboratory, or on a simulator capable of replicating all maintenance and repair functions,	the candidate directs the proper performance of gas turbine propulsion plant repairs.	The candidate directs the performance of maintenance procedures on gas turbine vessel propulsion and supporting auxiliary equipment in the safest, most efficient way by: <ol style="list-style-type: none"> 1. Utilizing instruction manuals and manufacturer publications for repair and maintenance procedures; 2. Performing repairs in accordance with manufacturer’s guidelines and technical specifications; and 3. Performing repairs using the correct tools and spare parts. Procedures used for this assessment should include: <ol style="list-style-type: none"> 1. Compressor Borescope inspection; 2. Turbine Borescope inspection; 3. Accessory gear box appurtenance overhaul; 4. Main fuel control performance calculations or replacement; 5. Variable stator vane positioner replacement; and 6. Demister cleaning and inspection.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
7.1.D <i>All Note 1</i>	Manage safe and effective maintenance and repair procedures	Planning maintenance, and repairs including statutory and class verifications	On a vessel powered by propulsion machinery of at least 4,000 HP, or in a laboratory and given technical specifications and manufacturer's manuals for shipboard equipment,	the candidate plans scheduled maintenance and corrective repairs.	<p>The candidate plans and schedules maintenance procedures in accordance with technical specifications and operational requirements by:</p> <ol style="list-style-type: none"> 1. Identifying the appropriate manufacturer, company, statutory and classification requirement for each maintenance procedure performed (as applicable); and 2. Developing a work plan describing the assets involved and steps performed to accomplish maintenance and repairs tasks leading to restored functionality of propulsion plant components. <p>The candidate's plan should include:</p> <ol style="list-style-type: none"> 1. Personnel; 2. Tools; 3. Spare parts and supplies; 4. Time; 5. Safety precautions and considerations; 6. Lock Out/Tag Out procedures; 7. Communications; 8. Restoration processes; and 9. System testing and verification.

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Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
8.1.A <i>All Note 1</i>	Detect and identify the cause of machinery malfunctions and correct faults	Detection of machinery malfunction, location of faults and action to prevent damage Inspection and adjustment of equipment Non-destructive examination	On a vessel powered by main propulsion machinery of at least 4,000 HP, in a laboratory, or on a simulator capable of replicating all propulsion plant functions,	the candidate detects the abnormal operation of plant machinery, causes of the abnormalities and determines the actions taken to prevent damage.	The candidate performs procedures utilized to detect, locate and prevent damage by faults and malfunctions of propulsion and auxiliary machinery associated with the relevant propulsion plants, including: 1. Determining machinery malfunctions through comparison of machinery performance data to the standards associated with a specific operating scenario; 2. Using performance indication and testing devices and equipment to locate faults in machinery operation; and 3. Performing the procedures necessary to prevent damage by machinery faults and malfunctions in accordance with manufacture guidelines and technical specifications.
9.1.A <i>All Note 1</i>	Ensure Safe Working Practices	Safe Working Practices	On a vessel powered by main propulsion machinery of at least 4,000 HP, in a laboratory, or on a simulator capable of replicating all maintenance and repair functions,	the candidate directs the use of safe working practices in all phases of maintenance, troubleshooting, and repair.	The candidate directs the safe performance of work in compliance with industry requirements, codes, permissions and environmental concerns by identifying: 1. Vessel permit requirements by reviewing preventive and scheduled maintenance lists; 2. Machinery preparation and isolation requirements as related to safe working practices; and 3. Maintenance procedures that inherently relate to environmental concerns and procedures.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
10.1.A <i>All Note 1</i>	Control trim, stability and stress	<p>Understanding of fundamental principles of ship construction and theories and factors affecting trim and stability and measures necessary to preserve trim and stability.</p> <p>Knowledge of the effect on trim and stability in the event of damage to and flooding of a compartment.</p> <p>Knowledge of IMO recommendations concerning ship's stability.</p>	On a vessel powered by main propulsion machinery of at least 4,000 HP,	The candidate ensures that stability and stress conditions are maintained within safety limits at all times.	<p>The candidate directs engine department operations within safe vessel stability and stress criteria by:</p> <ol style="list-style-type: none"> 1. Providing the bridge team with before and after tank level measurements; 2. Coordinating liquid transfers with the bridge team; 3. Locating and recording the maintenance and testing of watertight compartment doors; 4. Identifying possible vessel flooding countermeasure procedures and effects thereof; and 5. Complying with rules, regulations and codes pertinent to vessel stress, stability, and trim.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must be approved by the National Maritime Center before use.

Enclosure (2) to NVIC 02-17

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
11.1.A <i>All Note 1</i>	Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea, security and protection of the marine environment	Knowledge of international maritime law in international agreements and conventions: Responsibilities under the relevant requirements of international agreements and conventions Knowledge of National legislation for implementing international agreements and conventions	On board a vessel or in a laboratory, when asked to describe compliance with legislative requirements,	the candidate describes the procedures for monitoring operations and maintenance to comply with legislative requirements; that potential non-compliance is promptly and fully identified; and that requirements for renewal and extension of certificates are acted upon to ensure continued validity of survey items and equipment.	The candidate, describes compliance and adherence to domestic and international regulations, rules and conventions relative to safety, security and protection of the marine environment, including: <ol style="list-style-type: none"> 1. Identifying vessel operations and maintenance procedures for compliance with legislative requirements for safety of life at sea, vessel security, and protection of the marine environment; 2. Directing operations to identify and eliminate potential non-compliance in a timely and efficient manner; and 3. Identifying vessel certificates and survey items that require renewal and requirements for the continued validity of each. The candidate's description should include: <ol style="list-style-type: none"> 1. International Convention of Load Lines; 2. SOLAS; 3. MARPOL; 4. STCW; 5. Maritime Declarations of Health; 6. ISM Code; 7. OPA 90; 8. U. S. Code; and 9. Code of Federal Regulations.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
12.1.A <i>All Note 1</i>	Maintain safety and security of the vessel, crew and passengers and the operational condition of lifesaving, firefighting and other safety systems	<p>A thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea)</p> <p>Organization of fire and abandon ship drills</p> <p>Maintenance of operational condition of life-saving, firefighting and other safety systems</p> <p>Actions to be taken to protect and safeguard all persons on board in emergencies</p> <p>Actions to limit damage and save the ship following fire, explosion, collision or grounding</p>	On a vessel or in a laboratory, when asked to describe the monitoring fire detection and safety systems	the candidate describes the procedures for monitoring fire detection and safety systems and ensures that all alarms are detected promptly and acted upon in accordance with established emergency procedures.	<p>The candidate describes procedures that will ensure the safety and security of the vessel, crew, and passengers, including:</p> <ol style="list-style-type: none"> 1. Identifying shipboard emergency procedures applicable to maintaining safety and security; 2. Actions in response to fire detection and safety related alarms; 3. Inspecting all lifesaving, fire fighting, and emergency response equipment for correct operation; and 4. Maintenance and use of safety, security and life saving related equipment. <p>The candidate's description should include:</p> <ol style="list-style-type: none"> 1. Two way VHF radios; 2. Survival Craft engines and maintenance; 3. Onboard Training and Drills; 4. Emergency Planning; 5. Fire and Smoke Monitoring Apparatus'; 6. Alarm Systems and Equipment; 7. Fixed CO2 and Foam Systems; 8. Damage Control Equipment; and 9. Fire Fighting Equipment.

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Enclosure (2) to NVIC 02-17

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
13.1.A <i>All Note 1</i>	Develop emergency and damage control plans and handle emergency situations	Ship construction, including damage control	On board a vessel of at least 1,600 GRT or 3,000 GT or in a laboratory, given a particulars for a vessel of at least 1,600 GRT or 3,000 GT,	the candidate develops a damage control plan in accordance with the established plans for emergency situations for damage control.	The candidate develops a damage control plan that includes: <ol style="list-style-type: none"> 1. Vessel Construction; 2. Investigation Procedures; 3. Dewatering Equipment; 4. Shoring; 5. Pipe Patching; 6. Bulkhead Plugging; 7. Emergency Hull Repairs; and 8. Flooding Countermeasures.
13.1.B <i>All Course</i>	Develop emergency and damage control plans and handle emergency situations	Methods and aids for fire prevention, detection and extinction	This KUP is demonstrated if the candidate has maintained the standard of competence for Advanced Fire Fighting as specified in 46 CFR 11.303(b).		
13.1.C <i>All Course</i>	Develop emergency and damage control plans and handle emergency situations	Functions and use of lifesaving appliances	This KUP is demonstrated by successful completion of an approved or accepted <i>Proficiency in Survival Craft</i> or <i>Proficiency in Survival Craft Limited</i> course or if the mariner holds an endorsement for PSC or PSC-Limited.		

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must approved by the National Maritime Center before use.

Task No.	STCW Competence	STCW Knowledge, Understanding, and Proficiency	Performance Condition	Performance Behavior	Performance Standard
14.1 <i>All Course</i>	Use of leadership and managerial skill	Knowledge of shipboard personnel management and training A knowledge of related international maritime conventions and recommendations, and national legislation A knowledge of related national legislation			These KUPs are demonstrated by successful completion of the approved <i>Leadership and Managerial Skills</i> course specified in 46 CFR 11.325(a)(3)(ii) and 11.327(a)(3)(ii).

Successful completion of these Assessment Guidelines will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to OSVs. Use of these guidelines is not mandatory and alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative guidelines must be approved by the National Maritime Center before use.

Record of Assessment

for

Chief Engineer Officer on Vessels Powered by Main Propulsion
Machinery of 3,000 kW / 4,000 HP Propulsion Power or More
Limited to Service on Offshore Supply Vessels

Candidate's Name

Candidate's Signature

Candidate's Mariner Reference No.

RECORD OF ASSESSMENT

Chief Engineer Officer on Vessels Powered by Main Propulsion Machinery of 3,000 kW / 4,000 HP Propulsion Power or More Limited to Service on Offshore Supply Vessels

NOTE TO QUALIFIED ASSESSOR(S): In performing your function as a qualified assessor (QA), you may use your initials to indicate you have personally witnessed the demonstration of skill or ability by the person being assessed. The Assessment Guidelines in Enclosure (2) will provide satisfactory evidence of meeting the standard of competence specified in Section A-III/2 of the STCW Code as applicable to Offshore Supply Vessels (OSVs). The use of these Assessment Guidelines is not mandatory and an alternative means of having achieved the standards of competence in the STCW Code will be considered. In accordance with 46 CFR 11.301(a)(1)(i), alternative Assessment Guidelines must be approved by the National Maritime Center before use.

STCW Competence	STCW Knowledge, Understanding, and Proficiency	Task No.	Task Description	Assessor's Initials	Date
Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Diesel Engine Propulsion Plant	1.1.A <i>Motor</i> <i>Note 1</i>	Prepare engineering plant for service		
		1.1.B <i>Motor</i> <i>Note 1</i>	Operate engineering plant in maneuvering mode		
		1.1.C <i>Motor</i> <i>Note 1</i>	Operate engineering plant at full sea speed		
		1.1.D <i>Motor</i> <i>Note 1</i>	Secure engineering plant		

Notes: The following notes are used in the "Task No." column:

All The assessment is required for all propulsion modes.

Motor The assessment is required for an endorsement valid for motor propelled vessels.

Steam The assessment is required for an endorsement valid for steam propelled vessels.

GT The assessment is required for an endorsement valid for gas turbine propelled vessels.

OSV The assessment is specific to OSVs, and another assessment of the KUP is needed for an endorsement that is not limited to OSVs. For an endorsement that will be limited to OSVs, the identically numbered assessment from NVIC 15-14 for the endorsement that is not limited to OSVs may be substituted for this assessment.

Note 1 This assessment is the same or equivalent to one for an endorsement that is not limited to OSVs, and need not be repeated to remove the limitation.

Candidate's Name

Candidate's Mariner Reference No.

STCW Competence	STCW Knowledge, Understanding, and Proficiency	Task No.	Task Description	Assessor's Initials	Date
Manage the operation of propulsion plant machinery	Design features, and operative mechanism of the following machinery and associated auxiliaries: Marine Steam Propulsion Plant	1.2.A <i>Steam</i> <i>Note 1</i>	Prepare engineering plant for service		
		1.2.B <i>Steam</i> <i>Note 1</i>	Operate engineering plant in maneuvering mode		
		1.2.C <i>Steam</i> <i>Note 1</i>	Operate engineering plant at full sea speed		
		1.2.D <i>Steam</i> <i>Note 1</i>	Secure engineering plant		
	Design features, and operative mechanism of the following machinery and associated auxiliaries: Gas Turbine Propulsion Plant	1.3.A <i>GT</i> <i>Note 1</i>	Prepare engineering plant for service		
		1.3.B <i>GT</i> <i>Note 1</i>	Operate engineering plant in maneuvering mode		
		1.3.C <i>GT</i> <i>Note 1</i>	Operate engineering plant at full sea speed		
		1.3.D <i>GT</i> <i>Note 1</i>	Secure engineering plant		

Candidate's Name

Candidate's Mariner Reference No.

STCW Competence	STCW Knowledge, Understanding, and Proficiency	Task No.	Task Description	Assessor's Initials	Date
Plan and schedule operations	Thermodynamics and heat transmission Mechanics and hydromechanics Propulsive characteristics of diesel engines, steam and gas turbines, including speed, output and fuel consumption Heat cycle, thermal efficiency and heat balance Refrigerators and refrigeration cycle Physical and chemical properties of fuels and lubricants Technology of materials Naval architecture and ship construction	2.1.A <i>All OSV</i>	Plan and prepare operations		
Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery	Start up and shut down main propulsion and auxiliary machinery, including associated systems Operating limits of propulsion plant	3.1.A <i>Motor Note 1</i>	Measure and calculate a motor propulsion plant load		
		3.2.A <i>Steam Note 1</i>	Measure and calculate a steam propulsion plant load		
	3.3.A <i>GT Note 1</i>	Measure and calculate a gas turbine propulsion plant load			
	Functions and mechanism of automatic control for auxiliary machinery	3.4.A <i>All OSV</i>	Measure and calculate auxiliary plant load		
		3.5.A <i>All OSV</i>	Measure and calculate hotel plant load		
Manage fuel, lubrication and ballast operations	Operation and maintenance of machinery, including pumps and piping systems	4.1.A <i>All Note 1</i>	Transfer of fuels, liquid lubricants in bulk and bilge and ballast water		

Candidate's Name

Candidate's Mariner Reference No.

STCW Competence	STCW Knowledge, Understanding, and Proficiency	Task No.	Task Description	Assessor's Initials	Date
Manage the operation of electrical, electronic and control equipment	Marine electro-technology, electronics, power electronics, automatic control engineering and safety devices Design features and system configurations of automatic control equipment and safety devices	5.1.A <i>Motor</i> <i>Note 1</i>	Diesel propulsion plant electrical and electronic equipment and systems		
		5.1.B <i>Steam</i> <i>Note 1</i>	Steam propulsion plant electrical and electronic equipment and systems		
		5.1.C <i>GT</i> <i>Note 1</i>	Gas turbine propulsion plant electrical and electronic equipment and systems		
		5.1.D <i>All</i> <i>Note 1</i>	Electrical and electronic equipment and systems relative to power generation		
		5.1.E <i>All</i> <i>Note 1</i>	Electrical and electronic equipment and systems relative to electro-hydraulic and electro-pneumatic control systems		
Manage trouble-shooting, restoration of electrical and electronic control equipment to operating condition	Troubleshooting of electrical and electronic control equipment Function test of electrical, electronic control equipment and safety devices Troubleshooting of monitoring systems Software version control	6.1.A <i>All</i> <i>Note 1</i>	Safe working practices relative to shipboard electrical systems		

 Candidate's Name

 Candidate's Mariner Reference No.

STCW Competence	STCW Knowledge, Understanding, and Proficiency	Task No.	Task Description	Assessor's Initials	Date
Manage safe and effective maintenance and repair procedures	Management techniques of maintenance and repair procedures related to main propulsion and auxiliary / ancillary machinery and equipment	7.1.A <i>Motor OSV</i>	Maintenance procedures (Motor)		
		7.1.B <i>Steam Note 1</i>	Maintenance procedures (Steam)		
		7.1.C <i>GT Note 1</i>	Maintenance procedures (Gas Turbine)		
		7.1.D <i>All Note 1</i>	Planning scheduled maintenance		
Detect and identify the cause of machinery malfunctions and correct faults	Detection of machinery malfunction, location of faults and action to prevent damage Inspection and adjustment of equipment Non-destructive examination	8.1.A <i>All Note 1</i>	Methods to detect the abnormal operation of plant machinery, causes of the abnormalities and the actions taken to prevent damage		
Ensure Safe Working Practices	Safe Working Practices	9.1.A <i>All Note 1</i>	Safe working practices		
Control trim, stability and stress	Understanding of fundamental principles of ship construction and theories and factors affecting trim and stability and measures necessary to preserve trim and stability. Knowledge of the effect on trim and stability in the event of damage to and flooding of a compartment. Knowledge of IMO recommendations concerning ship's stability.	10.1.A <i>All Note 1</i>	Stability and stress		

Candidate's Name

Candidate's Mariner Reference No.

STCW Competence	STCW Knowledge, Understanding, and Proficiency	Task No.	Task Description	Assessor's Initials	Date
Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea, security and protection of the marine environment	Knowledge of international maritime law in international agreements and conventions	11.1.A <i>All</i> <i>Note 1</i>	Compliance with legislative requirements		
Maintain safety and security of the vessel, crew and passengers and the operational condition of lifesaving, firefighting and other safety systems	A thorough knowledge of life-saving appliance regulations (International Convention for the Safety of Life at Sea) Organization of fire and abandon ship drills Maintenance of operational condition of life-saving, firefighting and other safety systems Actions to be taken to protect and safeguard all persons on board in emergencies Actions to limit damage and save the ship following fire, explosion, collision or grounding	12.1.A <i>All</i> <i>Note 1</i>	Fire detection and safety systems		
Develop emergency and damage control plans and handle emergency situations	Ship construction, including damage control	13.1.A <i>All</i> <i>Note 1</i>	Develop a Damage Control Plan		

 Candidate's Name

 Candidate's Mariner Reference No.

Assessor and Vessel Information

Qualified Assessors (QAs) witnessing the successful demonstrations noted in this record should provide the information below relative to their service with the candidate. Prospective QAs should have at least 1 year of experience as Chief Engineer, Second Engineer Officer, or national First Assistant Engineer on seagoing vessels of at least 3,000 kW (4,000 HP). After December 31, 2017, QAs must be approved by the National Maritime Center (46 CFR 10.107). Qualified military personnel will not need to be approved as QAs and may continue to sign assessments after December 31, 2017.

Vessel Name	Propulsion Power	Propulsion Mode	Assessor's Name	Assessor's Signature	Assessor's Initials	Assessor's Mariner Reference No.	Assessor Shipboard Position
M/V Esquilo	10,987 HP	Motor	Gary Holster	<i>Gary Holster</i>	<i>GH</i>	162953	Chief Engineer

Candidate's Name

Candidate's Mariner Reference No.