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IN–WATER BOTTOM SURVEYS BY MEANS OF REMOTELY OPERATED UNDERWATER VEHICLE (ROV) ARE ACCEPTED BY DNV GL

Relevant for suppliers and owners/managers of ships according to the “Rules for Classification of Ships”.

November 2015

This is a notice that DNV GL accepts underwater examination of a ship’s bottom by means of remotely operated underwater vehicle (ROV) on a case by case basis. A remote means of examination - typically an ROV - may be used to carry out relevant parts of the in-water bottom survey referring to the “Rules for Classification of Ships”. This survey typically involves an overall examination of underwater hull items, ie, the hull plating, stern frame, rudder and propeller.

In connection with periodical in-water bottom surveys, tasks such as measuring rudder bearing clearances or opening of access hatches and sea valves will have to be completed in the same way as a standard in-water survey, using divers.

When remote means of examination are applied, the following are to be complied with:

General
Remote methods applied are, in principle, to provide the survey results normally obtained during a survey carried out by a diver.

Proposals for the use of remote inspection methods are to be submitted to DNV GL (local station) for acceptance in advance of the survey. This acceptance covers the remote inspection method, and consequently does not cover whether the vessel may carry out a bottom survey afloat in lieu of a bottom survey in a dry dock.

Conditions
Survey by a diver may always be required by the attending surveyor if found necessary in order to carry out a satisfactory survey. The use of remote inspection methods may be restricted or limited where a record or indication of abnormal deterioration or damage to the ship’s structure appears. It may also be inapplicable if conditions are found during the course of the survey that affect the class of the ship. If the remote inspection reveals damage or deterioration that requires further examination, the surveyor may require a close-up examination to be undertaken by a diver or with the ship in dry-dock.

Procedures
The inspection is to be carried out by a qualified technician or technicians with adequate knowledge of hull structure inspections under the surveillance of a DNV GL surveyor. The attending surveyor(s) is/are to be fully informed about the firm’s proposed inspection plan. The surveyor must be satisfied with the method of live pictorial representation and the method of localization of the ROV on the structure. Records of live pictorial representation, including the localization of the ROV, must ensure a reproducible review of the ROV’s “areas covered” and results. The position on the structure, viewing direction, present activity, results of the inspection, moving direction, etc. should be recorded.

For general requirements regarding bottom surveys and in-water surveys, reference is made to the Rules for Classification of Ships, Pt. 7, Ch. 1, Sec. 5 as partly quoted in the appendix (current status).

Recommendations
If in-water bottom surveys by means of remotely operated underwater vehicle (ROV) are an interesting option, DNV GL is there to provide support. Acceptance is carried out on a case-by-case basis. For further information or enquiries, please contact the local DNV GL office.

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Appendix

Bottom surveys

1.1 General

1.1.1 Bottom surveys are surveys of the outside of the ship’s hull below the deepest load waterline and related items.

1.1.2 The survey shall include examination of:

- Hull plating and stern frame
- Openings. At alternate bottom surveys, all sea valves, including scuppers and sanitary discharges, shall be fully or partly opened up and examined. Sea valves should be overhauled, if deemed necessary by the surveyor.
- For ships fitted with box coolers, the coolers shall be withdrawn at alternate bottom surveys for examination of the box cooler space, water cover and top plate, mounting flange with weld connection to the hull, connection bolts and gaskets.
- Steering fins, shaft brackets and other appendages fitted
- Rudder with attachments and bearings
- Propeller with attachments and propeller shaft external parts
- Thrusters
- Stabilizer fins

1.5.3 The in-water survey shall provide the information obtained from a docking survey. During such surveys, the following conditions shall be satisfactorily fulfilled:

- The water conditions at the location of the survey shall be satisfactory with respect to visibility, current, swell, etc.
- The cleanliness of the hull below the waterline shall be clear enough to permit a meaningful examination of the plating, appendages and the welding.
- An approved diving company shall be used in the survey, using pictorial equipment of such quality that the surveyor is fully satisfied with the information relayed to him.
- A diving report shall be presented.
- Location of possible damage to be ascertained.
- The survey shall be witnessed by a surveyor of the Society.

1.5.4 If the in-water survey reveals damage or deterioration that requires early attention, the surveyor may require that the ship be dry-docked in order that a detailed survey can be undertaken and the necessary repairs carried out.