When requested by owners, DNV GL may accept alternative survey methods for units in operation using (mini) Remote Operated Vehicles (ROVs) for ballast tank inspections on DNV GL-classed mobile offshore units in operation.

This technical update outlines the minimum requirements and conditions that must be met in order to accept the use of ROVs for ballast tank inspections. This includes the planning and preparation as well as conditions for acceptance and reporting.

Notwithstanding DNV GL acceptance, it is emphasised that the method limits the possibilities to establish the “big picture” of the tank’s condition. Because of these limitations, this technical update concludes with restrictions which are to be applied.

PLANNING AND PREPARATION
1. The owner shall submit plans and procedures for an ROV survey of the tank(s) to DNV GL in advance of the survey and make these available on board.
2. Pre-planning should include an agreement between DNVGL and the owner on the criteria for acceptance and crediting of the survey.
3. Plans should be in place for how to handle the discovery of cracks and damage which may require repair at the yard or in dock.
4. Plans should include drawings or forms for identifying the areas to be surveyed, the extent of cleaning and NDT locations and methods, and provision for the reporting of any damage or deterioration found.
5. A history of the previous defects found in the tank shall be made available.
6. Use of ROVs may be considerably more time-consuming for the DNV GL surveyor compared to traditional inspection by tank entry. Extra time spent is expected to be compensated for.

CONDITIONS FOR ACCEPTANCE
1. Water clarity and visibility should be acceptable to the attending surveyor.
2. Access to all areas of the tank must be possible using the ROV, and the ROV pilot must be capable of manoeuvring the ROV as directed by the surveyor.
3. The tank has to be suitably marked (frames, distance off CL, etc) such that the location of the mini ROV in the tank is easy to determine at any time. (Alternative methods, e.g. sonar, may be considered if they can be proved reliable.)
4. Tank coating must be in good condition.
5. The ROV inspection footage must be recorded on video media (DVD/tape) and the system should be able to record voice commentary along with the images.
6. If the ROV is to be used for thickness measurements, the firm must be approved under approval programme 402A.
7. The DNV GL surveyor is expected to carry out 100% witnessing in order to be able to direct the operator and cover the inspection scope.

REPORTING
1. Upon completion of the survey, an inspection report, including pictures/video recordings, shall be produced by the inspection company and presented to DNV GL for review. Reporting should include measurements of the cathodic protection system performance for the renewal survey.
2. In connection with the survey reporting, the criteria on which the tank survey has been credited shall be clearly stated, including any limitations identified.

RESTRICTIONS
As stated, ROV ballast tank inspections are limited in establishing an overview. Since the quality of the inspection has to be at least equivalent to that achieved using traditional means (manned entry), the following applies:
1. Ballast tank inspections using an ROV shall always be combined with traditional inspections by tank entry. At least 20 per cent of the ballast tanks inspected by the ROV shall also be entered. If consecutive tank inspections are carried out by a mini ROV, the surveyor shall ensure that this traditional inspection covers different tanks in each survey.
2. The owner should consider the implications of the choice of inspection method with regard to the inherent limitations and possible need for supplementary inspection – indications found using a mini ROV may necessitate further inspection by manned entry, and DNV GL reserves the right to require manned entry to any tank in addition to the ROV inspection.