PIANC
The World Association for Waterborne Transport Infrastructure

MarCom

PIANC WG 200

Recommendations for the Design and Assessment of Marine Single Point Mooring (SPM) or Multi-Point Mooring (MPM) Facilities

Terms of Reference

Background

The design guidelines for oil & gas terminals recently and historically published by PIANC are intended for typical onshore or nearshore terminals where the marine facility is developed by means of dock, quays, jetties, sea islands and other facilities that are typically located in sheltered or partially-sheltered locations. However these publications do not cover (indeed are specifically excluded) SPM or MPM terminals because of the particulars relating to the design, operation and maintenance of these kind of facilities. Reference is made to the Report No. 153-2016 "Recommendation for the Design and Assessment of Marine Oil and Petrochemical Terminals" and to the Report No. 172-2016 "Design of Small to Mid-scale LNG Terminals Including Bunkering".

Objectives

The main goal of the working group is to develop recommendations concerning the design practices and principles for marine SPM and MPM terminals.

The WG should provide guidance to owners, designers, and operators of marine SPM and MPM terminals and related infrastructures worldwide, in order to provide a safe, efficient and cost-effective operation of these terminals. This document should be considered as an additional document to existing standards, but on this topic only few standards exist so this report will be very useful for design and operations.

The objective of the WG is, therefore, to provide a uniform set of guidelines for the design, analysis, and maintenance for new terminals as well as rehabilitation and upgrade of existing facilities.

Existing Reports

PIANC has no directly related publications on the subject. PIANC MarCom have recently edited several Working Groups where the subject has been intentionally excluded from the scope keeping open the possibility for new WGs to work from:

- Report No. 153-2016 "Recommendation for the Design and Assessment of Marine Oil and Petrochemical Terminals"
- Report No. 172-2016 "Design of Small to Mid-scale LNG Terminals Including Bunkering"

Other publications to be coordinate and referenced on this topic include:

- Guidelines for the Design, Operation and Maintenance of Multi-Buoy Moorings 1st Edition 2010 (June) OCIMF
- Single Point Mooring Maintenance and Operations Guide 2nd Edition 1995 (January) OCIMF

Scope

These guidelines should be applicable to nearshore SPM and MPM used for the transfer of oil & gas.

Under the topic of SPM are specifically included the following concepts:

- Single Buoy Mooring either Catenary Anchor Leg Mooring (CALM) or Single Anchor Leg Mooring (SALM)
- Fixed and flexible single point structures commonly known as mooring Towers, Turrets and Soft Yokes

Under the topic of MPM are specifically included the following concepts:

- Multi Buoy Mooring (MBM)
- Spread Mooring Systems (SMS)
- Any combination of buoy, fix points or anchors

The guideline will cover the design of the marine facility itself and their associated Risers and Pipeline End Manifolds (PLEMs)

Suggested Final Products

All results will be described in a published PIANC report that provides full guidance on the design, operation, rehabilitation and upgrade of SPM and MPM marine terminals.

Recommended Members

In addition to the owners and operators of such marine terminals, the Working Group members should represent parties involved such as consulting engineers, suppliers and contractors, organizations like OCIMF, IAPH and public authorities. Members with a research background should also be welcomed.

Relevance for Countries in Transition

The guideline will aid countries in transition since compliance with the standards will result in improved safety and environmental protection, taking advantage of the collective knowledge of the developed countries and major global stakeholders.

Climate Change

Climate Change needs to be considered in the planning and design of coastal infrastructure and civil engineering projects. The document will address climate change issues in the context of conducting risk assessments, during the establishment of site conditions, and in the development of the Basis of Design.