THE ENGINEERING EQUIPMENT AND MATERIALS USERS' ASSOCIATION

Emission reduction from oil storage tanks and loading operations

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1. Introduction

1.1 Scope

The prevention and control of volatile organic compound (VOC) emissions from storage tanks containing oil or chemical feedstocks or products is of primary importance, not only for economic reasons (loss of product) but increasingly to minimize the impact on the environment. National and local authorities are becoming progressively more environmentally conscious, and various countries have introduced, or are introducing, statutory regulations aimed at minimising the risk of such emissions.

The EEMUA Storage Tanks Technical Committee decided that there was a lack of guidance in this area and has therefore developed this Publication to meet that need. In the first sections, this Guide addresses the main theory on how emissions can be minimised by focusing on the source of emissions. The theory is valid for most stored products including oil and chemical feedstocks. However, this Publication deals mainly with the storage of hydrocarbons and the consequent emission controls for such storage tanks.

'Stench', not originating from VOCs but from sulphur components, is not within the scope of this Publication.

EEMUA 213 therefore guides tank owners and operators, manufacturers, designers and specifiers to the most suitable tank type for particular feedstocks based on the true vapour pressure (TVP) of products. It provides background theories on possible solutions to prevent or reduce emissions from tanks and during loading operations. It also gives guidelines on the treatment of the escaping vapours when the achieved level of emissions does not match the intended level or statutory requirements. It describes:

- Each vapour treatment system currently available.
- The system configuration and where possible includes a sketch of the apparatus.
- The technical aspects of the system.
- Some requirement for utility connections and capacities.
- Possible achievements with respect to reduction of dangerous gases.
- The limitations of each system.

1.1.1 Note on Terminology

The term stored 'product' is used in the text. Stored **product** refers to whatever oil or chemical is stored in the tank, including feedstocks.

1.2 How to Use this Publication

The best solution to prevent and limit emissions to atmosphere of VOCs and vapour from stored products in tanks is to select the best type of tank for a particular product. The key parameters for such a selection process are the flashpoint and the TVP of a product. Chapter 2 describes how the use and interpretation of these parameters can be the basis for the selection of a suitable storage tank for hydrocarbon products. The sources of emissions from available storage tank types are also described in this Chapter.