ABSTRACT

The Centre for Best Available Techniques (BAT) is founded by the Flemish Government, and is hosted by VITO. The BAT centre collects, evaluates and distributes information on environmentally friendly techniques. Moreover, it advises the Flemish authorities on how to translate this information into its environmental policy. Central in this translation is the concept “BAT” (Best Available Techniques). BAT corresponds to the techniques with the best environmental performance that can be introduced at a reasonable cost. In this report the BAT for bunding and loading zones for aboveground storage of dangerous or combustible liquids are listed. The BAT selection in this study was based on plant visits, a literature survey, a technical and socio-economic study, cost calculations, and discussions with industry experts and authorities. The formal consultation was organised by means of an advisory committee.

Chapter 1 of the report contains the scope and goals of the study. Chapter 2 describes the relevant plants and sectors for storage of dangerous or combustible liquids, and the environmental legal aspects, including the environmental conditions in VLAREM II. In chapter 3 the different types of storage are described. The environmental and external safety risks are also given, together with measures to control and manage the risks, including bunding and other containment systems.

Chapter 4 describes the aspects of loading zones and bunding for storage of dangerous or combustible liquids which are relevant for environmental legislation. The available techniques, their applicability, environmental and safety aspects and financial aspects are covered per bunding aspect, for fixed containers in 4.2 – 4.12, for movable containers in 4.13 – 4.25, and for the loading zones associated with fixed containers in 4.1. For each aspect, a comparison between VLAREM II and other local, regional, national or international standards is made. Based on this information a recommendation for a default VLAREM framework for new plants is made per aspect.

The BAT selection in chapter 5 evaluates the techniques on technical feasibility, environmental benefits and economical feasibility, leading to an assessment which techniques are BAT, and which are not or only case by case.

In chapter 6 of the report recommendations are made for the environmental conditions and related definitions for loading zones and bunding of aboveground storage of dangerous or combustible liquids. However, not all proposed changes in chapter 4 are retained in chapter 6. If, according to the advisory committee, a proposed change in chapter 4 did not have sufficient added value compared to increased complexity or increased efforts for companies, other final recommendations are made in chapter 6. These recommendations are mainly on the general binding rules in VLAREM II in headings 6.1-6.4. Furthermore, heading 6.5 contains points of attention for individual permit conditions, for instance in case of a deviation of the general binding rules in the permit.