

CHAPTER 1

Introduction

1.1 The Significance of Inventory in Petroleum Industry

Currently the petroleum industry plays a more becoming important role in Thai economy. Each day consumers all over the country utilize a large amount of finished petroleum in various ways, while most of which is used for transportation and in the manufacturing industry. The petroleum product is available through the production of domestic refineries and is imported from overseas countries.

General the petroleum product must be stored in the storage tanks which are located countrywide before being distributed to various petroleum stations. Storing is also important for petroleum industry business because it will affect direct the inventory of the product.

The major problem that appearing from calculation inventory of petroleum products in various storage tanks is calculation of gross observed volume and gross standard volume. Whether error calculation inventory is great or little has direct effects process of calculation gross observed volume and gross standard volume.

1.2 The Effect of Factors to Inventory of Oil

The effect of factors to inventory of oil takes place in two ways. One is procedure calculation gross observed volume, second is procedure calculation gross standard volume.

The amount of inventory depends on these factors. Several computer programs are developed to calculate the amount of the inventory. However, at present we find

that their potential does not reach the satisfactory level and has a lot of limitations, especially a database-supported function.

Most of such programs have to be imported from abroad then its utilization is very limited. This work, therefore, will focus on developing program calculation inventory which is efficient, suitable for Thailand's condition and costs less than a program bought from abroad.

1.3 The objective of this study

1.3.1 Develop simulation program for calculate the inventory of petroleum quantity in storage tanks.

1.3.2 Analyses the value obtained from the developed simulation program with results of currently used simulation program and the reported inventory record from the Depot.

1.4 The Scope of this study

1.4.1 The study is the determination of inventory stock of oil by using computer simulation program which is written in Delphi language. This program is suitable for the steps necessary to calculate static liquid quantities, at atmospheric conditions, in upright, cylindrical tanks.

1.4.2 The study also specifies equations that allow the values of correction factors to be computed for gross observed volume and gross standard volume.

1.4.3 The study does not address the calculation of clingage, nonliquid material, small quantities (such as onboard quantities, quantities remaining on board, and Wedge Formula, where material is not touching all bulkheads on marine vessels), and vapor space calculations.