



ABSTRACT

TIMBAL, Feddy Miller A. *A Proposed Inventory Control System for RSM Petron Service Station*. De La Salle Univesrity – Dasmariñas, Dasmariñas Bagong Bayan – B, Dasmariñas, Cavite. October 2008

Inventory control is an important aspect in managing businesses. Inventory control model can minimize the expenses of the operations; hence, it gives good profit for the business.

The RSM Petron Service Station is a gasoline station located in Carmona, Cavite. It sells four different petroleum products – Diesel, Regular, XCS, and Unleaded – where diesel is the most in demand. This demand of diesel establishes the control of inventory of all the petroleum products. Due to this, the current inventory model used by the management is just to order certain amount of diesel and other products daily.

Limited to one petroleum product only, this study aims to minimize the cost of expenses of inventory of diesel for the RSM Petron Service Station by formulating a system of inventory control. This study specifically intends to determine the supply and demand schedule of the gasoline station from January to June 2008, and provide the optimal inventory control.

This study was conducted using the following steps: data gathering, data analysis, formulation of new inventory model, and comparative analysis. Most of the data used in this study were obtained from the RSM Petron Service Station. These data are as follow: weekly acquisition cost of diesel per liter from December 31, 2007



to June 29, 2008, transportation cost, dimensions of storage tank and trailer tanker, and sales of diesel from January to June including the demand during lead time.

The Probabilistic Economic Order Quantity Model was used in this study since (1) there are unfilled demand of diesel accumulated during the ordering period for replenishment of stocks, (2) there is only one trailer tanker to carry petroleum products, and (3) demands of diesel during lead time are distributed equivalently with time. From the gathered data on the sales of diesel, weekly demand (D) of 20,563.69 liters, penalty cost (p) of PhP3.09, set-up cost (K) of PhP3,467.40, holding cost (h) of PhP3.93 and demand during lead time ($E\{x\}$) of 672.03 liters were calculated. Applying the concept of the aforementioned model, the RSM Petron Service Station should order 6,042.52 liters of diesel whenever inventory drops to 684.66 liters. Implementing this model, the gasoline station would have to order such amount just four (4) times a week costing PhP13,869.60 saving up to PhP10,402.20 compared to the existing model with PhP24,271.80 expense. In other words, the station can conserve PhP540,914.40 from their current operations with the new model a year.