Thesis Title	A Neural Network Based Advisory System for a Glycol & Water Chiller Plant
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Abstract

For almost a decade, neural networks have shown great potentials in solving non - linear control problems. This thesis shows a possibility of using a neural network to advise a operator of chiller plant. This plant, located at the head quarter of Siam Commercial Bank, is consisted of two glycol & water chillers. Nonlinear dynamic characteristics, resulting from outdoor conditions, equipments within the plant such as pumps, modulation valve, are discussed herein. The objective of this research is to minimize energy cost while maintaining high performance of the plant. In this thesis, identification and prediction of non-linear discrete time system using probabilistic neural network are studied. To develop an algorithm for achieving such as objective, first step is to learn the plant dynamic from historical data. After training the neural network completely, it is subsequently used for predicting of cooling load at the Siam Commercial Bank Building 1 and operating optimal point of the glycol & water chiller plant. We use the visual basic 5.0 to develop a advised chiller plant management program. This program learns the information from both past data and future data of the chiller plant. Furthermore, plant operators can train it.

Keywords : Artificial Intelligent / Neural Network / Water Chiller