MARA INSTITUTE OF TECHNOLOGY

SCHOOL OF MECHANICAL ENGINEERING

FINAL YEAR PROJECT REPORT

TITLE:

DISTRICT COOLING SYSTEM WITH CHILLED WATER STORAGE.

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ABSTRACT

This study is carried out as a partial requirement for the award of Bachelor of Mechanical Engineering (Hons.) from the School of Mechanical Engineering, MARA Institute of Technology, Shah Alam.

District Cooling System is a method of providing the needs for cooling load of a large area (District term) collectively from one or more central chiller plants. Since cooling is a necessity and is known to consume a large amount of power, a mean of saving in terms of expenditure is normally goes with it.

Thermal Energy Storage is well known for this purpose. Thus, this study is about District Cooling System with Chilled Water Storage. This study will try to extract the possibility of applying this system to PNB Building and the possibility of selling the excessive cooling load to neighbourhood buildings like LUTH , second phase under construction PNB's Building and a nearby apartment's block. We will also analyse the savings applicable by PNB's electrical expenditures for HVAC System.

In doing so, a brief study is made onto the existing conventional applied system at PNB Building to investigate the cooling load and it's electricity bills. The cooling load at LUTH and the apartments is estimated.

This study will also cover relevant topics like TES and DCS with chilled water storage to help further understandings.

ACKNOWLEDGMENT

In the name of Allah., the most gracious and merciful.

We praise Him and we seek His blessings on His noble Prophet s.a.w.,

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" May ALLAH Bless You all".

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