بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

MONA MAGHRABY

REVAMPING OF A PREHEAT TRAIN OF CRUDE ATMOSPHERIC UNIT UNDER TWO OPERATIONAL MODES OF NAPHTHA STABILIZING

By

AMANY GAMAL BADWEY ABO-MOUSA

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
CHEMICAL ENGINEERING

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Under the Supervision of

Dr. Mai Mohamed Kamal El-Din

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Professor of Chemical Engineering
Department
Faculty of Engineering, Port Said
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Approved by the
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FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

Revamping of a preheat train of crude atmospheric unit under two operational modes of naphtha stabilizing.

Key Words:
Energy integration, Naphtha stabilizer, Pinch analysis, Heat exchanger network, Revamping.

Summary:

The current research applies the recent graphical revamping methodology on an existing crude atmospheric distillation unit. The unit is located in north of Egypt (Suez region) and is operated under two different operational modes; (1) with naphtha stabilizer when LPG is separated from naphtha stream, and (2) without naphtha stabilizer when the process reformer is under run to reform all naphtha streams without stabilization. The unit processes 5,000 ton-per-day of crude oil coming from the Gulf of Suez. The current energy consumption is estimated to be 28.24 MW. Revamping of such plants is challenging and requires solution flexibilities. In this study, a simulation model and validation are initiated for heat exchanger network of two operational modes, using ASPEN ENERGY ANALYZER software, for energy analysis and optimization.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

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Table of Contents

List of Tables

List of Figures