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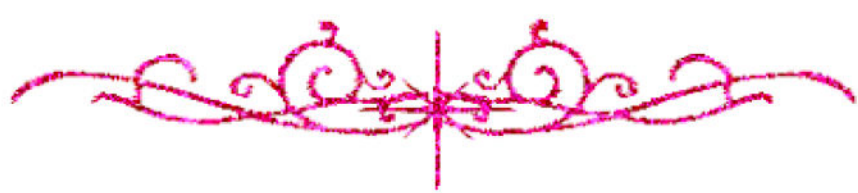
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Cairo University

**DEVELOPMENT OF A GENERAL METHODOLOGY
FOR ENERGY CONSERVATION AND PROCESS
INTEGRATION IN NATURAL GAS PROCESSING
PLANTS
CASE STUDY: WESTERN DESERT GAS COMPLEX
(WDGC - GASCO)**

By
Tamer Hamdy Riad Hafez

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
INTERDISCIPLINARY MASTER - PETROLEUM & NATURAL
GAS TECHNOLOGY**

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

Development of a General Methodology for Energy Conservation and Process Integration in Natural Gas Processing Plants Case Study: Western Desert Gas Complex (WDGC - GASCO)

Key Words:

General Methodology for Energy conservation, Process Integration and optimization for gas sector, Gap analysis, gas plants Equipment efficiency, IRR.

Summary:

The purpose of the present thesis is to develop a general method of methodology suitable for application in industry, including gas plants, to rationalize and improve the efficiency of energy use, by establishing a mechanism to monitor the current operational performance of equipment in factories, compare this performance with design performance and identify gaps between operational performances. We can identify opportunities to improve energy efficiency and increase production. The test of the effectiveness of the method was applied as a case study on a GASCO's Western Desert Gas Complex (WDGC) gas plant.

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.

Name:

Date:

Signature:

Acknowledgement

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