



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



HANAA ALY



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HANAA ALY



Cairo University

MODELING OF FAILURE PROBABILITY OF SURFACE CONTROLLED SUB-SURFACE SAFETY VALVE AT GAS LIFT WELLS, GULF OF SUEZ - EGYPT

By

Abdelrahman Darweesh Khaled Ayad

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
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In
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FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
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Prof. Dr. Abdulaziz M. Abdulaziz

.....

Prof. of Petroleum Engineering
Department of Mining, Petroleum, and
Metallurgical Engineering
Faculty of Engineering, Cairo
University

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Approved by the
Examining Committee

Prof. Dr. Abdulaziz M. Abdulaziz, Thesis Main Advisor

Prof. of Petroleum Engineering, Department of Mining, Petroleum, and
Metallurgical Engineering, Faculty of Engineering, Cairo University.

Prof. Dr. Abdelwaly A. Abdelwaly, Internal Examiner

Prof. of Petroleum Engineering, Department of Mining, Petroleum, and
Metallurgical Engineering, Faculty of Engineering, Cairo University.

Prof. Dr. Mohamed Gharib, External Examiner

Professor of Petroleum Engineering, Faculty of Engineering, Future University.

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
2021

Engineer's Name: Abdelrahman Darweesh Khaled Ayad
Date of Birth: 28/05 /1988
Nationality: Egyptian
E-mail: eng.a.ayad@gmail.com
Phone: +2 010 1212 6064
Address: Damietta - Egypt
Registration Date: 01/03/2018
Awarding Date: / /
Degree: Master of Science
Department: Petroleum Engineering



Supervisors:

Prof. Dr. Abdulaziz Mohamed Abdulzaiz

Examiners:

Prof. Dr. Abdulaziz M. Abdulaziz (Thesis Main Advisor)
Prof. Dr. Abdelwaly A. Abdelwaly (Internal examiner)
Prof. Dr. Mohamed Gharib (External examiner)
Prof. of Petroleum Engineering, Future University.

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Modeling Failure Probability for Surface Controlled Subsurface Safety Valve at
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Key Words:

Failure Probability; Surface Controlled Sub-Surface Safety Valve; Gulf of Suez;
lifetime; operational risk.

Summary:

This research aims to develop probability models for surface controlled subsurface safety valves versus lifetime, oil properties, water properties and compositions of downhole deposits, and concentration of sour gases in produced gas taking into account the different manufacturers of the valves. This research also aims to develop a model for cumulative number of failures for repairable valves versus lifetime. These models are expected to reduce operational risk, operation expenditures and unscheduled production interruptions.

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 reference section.

Name: Abdelrahman Darweesh Khaled Ayad Date: 26-09-2021

Signature:

DEDICATION

I devote this dissertation to my family: my parents, my wife, my daughter, and my son. I want to record a special moment for my son Yassin on his birthday, and I started writing this dissertation.

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