Sudan University of Science And Technology
College of Graduate Studies

Cooling System And Condenser Problems In Dr. Shareef Power Station

The Thesis Submitted In Partial Fulfillment Of The Requirement For The Master Degree Of Science In Power Engineering.

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وعلّم الإنسان ما لم يعلم

Presentation

To:

The Soul of My Father...

My Affectionate Mother...

My loyal Wife...

Acknowledgement

Firstly I will want to thank a Allah For his care and assistant, this thesis could not exist without support of Allah.

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Abstract

This research deals with the energy resource in Sudan. It included the steam plants, their components problems. The study is applied on Dr. Shareef Power Station in Khartoum North. It studied and displayed the station cooling system problems and the hazards which occur to this station; the deterioration of its performance and to the periods of its redundancy.

The findings of the research show that the deterioration of performance of the condenser, is due to the following:

1. Cooling tower problems.
2. Condenser problems.
3. Bad quality cooling water.
4. The non-conducting of the specified tests of the cooling water.
5. Problems of the other components of the cooling system.

Several suggestions were proposed for the maintenance; so as to avoid the occurrence of the current problems. This would help in increase of the efficiency of the stations. Likewise, Proposal was provided for doing that.

ملخص البحث

أهتم هذا البحث بدراسة مصادر الطاقة في السودان. وقد تشمل ذلك محطات البخارية ومكوناتها ودراسة أهم المشاكل التي تواجه نظام التبريد فيها. و قد تم دراسة نظام تبريد محطة د. محمود شريف الحرارية في الخرطوم بحري، قد تمت دراسة مكونات نظام التبريد في المحطة و سرد المشاكل و الأخطار التي تتعرض لها، مما يؤثر سلباً على أداء المحطة و يزيد من تكاليف الصيانة و فترات توقف المحطة.

وقد توصل هذا البحث إلى أنه يمكن أن يحدث التدني في أداء المحطة بسبب :

1. مشاكل في أبراج التبريد.
2. مشاكل في المكثف.
3. النوعية السيئة لمياه التبريد.
4. عدم إجراء الاختبارات و الفحوصات المعينة لمياه التبريد.
5. مشاكل في الأجزاء الأخرى لمنظومة التبريد.

وقد قدمت العديد من الأقتراحات لصيانة و تفادي حدوث المشاكل الحالية، مما سوف يساعد على زيادة كفاءة المحطة مع تقديم مقترحات لعمل ذلك.

List of Contents

Chapter one

Chapter Two
Fossil fuel Steam power plants

Chapter Three
Dr. Shareef Power Station

Chapter Four
Cooling System Troubles

Chapter Five
Cooling Water Systems Safeguarding

List of Figures

List of Tables