الآيــة

قال تعالى:

((اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ ﴿١﴾خَلَقَ الْإِنسَانَ مِنْ عَلَقٍ ﴿٢﴾اقْرَأْ وَرَبُّكَ الْأَكْرَمُ ﴿٣﴾الَّذِي عَلَّمَ بِالْقَلَمِ ﴿٤﴾عَلَّمَ الْإِنسَانَ مَا لَمْ يَعْلَمْ ﴿٥﴾))

صدق الله العظيم

سورة العلق الآيات 1–5

Dedication

This Research is dedicated to my father and my mother.

Acknowledgement

First and foremost, I wish to thank God for giving me strength and courage to complete this research.

I would like to thank my supervisor, Dr. GEDANI OSMAN ADDLAN for his assistance and guidance to complete this research.

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Abstract

One of serious problems in power systems that can threaten the concept of power system reliability and security is voltage instability and losses. Improving the systems reactive power handling capacity via Flexible AC Transmission system (Facts) devices is a remedy for prevention of voltage. The main objectives of this research are to investigate the methods of reduction the technical losses and corona losses in transmission line. And apply these methods in transmission line Marawi-Elmarkhiat as case study. Neplan Program was used to reduction these losses by static var compensator (SVC).And improved voltage. results show that the total losses about 22.017 MW, losses are reduced to 19.02 MW when installed static var compensator in main bus bar of kabashi substation.

مستخلص

واحدة من أخطر المشاكل في أنظمة القدرة الكهربائية والتي يمكن ان تهدد أمن وموثوقية أنظمة القدرة الكهربائية هي عدم استقرارية أنظمة الجهد الكهربائية والمفاقيد الفنية. لحل عدم استقرارية الجهد يتم تحسين امداد القدرة الرد فعلية عن طريق أجهزة نظام نقل التيار المتردد المرنة. الأهداف الأساسية لهذا البحث هي البحث عن طرق تقليل المفاقيد الفنية والمفاقيد الناتجة عن الكورونا في خطوط النقل باستخدام المعوضات التزامنية الساكنة وتطبيق هذه الطريقة في خط النقل مروي – المرخيات كحالة دراسة. تم استخدام برنامج نبلان لتقليل هذه المفاقيد وتحسين الفولتية بوسطة المكثف التزامني الساكن وجدت المفاقيد الكلية 22.017ميقا واط وقللت الي 19.02ميقا واط عندما تم تركيب المعوض التزامني الساكن في القضيب العمومي لمحطة الكباشي.

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