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Analysis of an Induction Generator for a Wind Turbine

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Analysis of an Induction Generator for a Wind Turbine

Final Project Report

April 25, 2011

Andrew Brown

ENGW 421 Technical Writing Project

Submitted to:

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Abstract

This document is an analysis of the induction generator and how it used in a wind turbine. There is an obvious need for new sources of energy. The squirrel-cage induction generator (SCIG) is often used in wind turbines because of its low cost and little need for maintenance. With my research I have shown why the SCIG is used so often. It's simple and rugged design make it ideal for wind turbines, where it can be very difficult to perform even routine maintenance. I have shown how easy it can be to turn an induction motor into a working induction generator. With the tests I have performed I was able to show the performance of an induction machine. I also explained how to enhance the performance of an induction generator. The induction machine draws reactive power from its grid connection affecting the power quality. This reactive power was easily provided with a bank of capacitors connected to the generators terminals. With my research and data I hope that this document will be able to show useful he squirrel-cage induction generator can be.

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