CALCULATION OF STABLE CONTROLLER VALUES FOR SINGLE AREA ISOLATED POWER SYSTEM USING BOUNDARY LOCUS METHOD

A project report submitted in partial fulfillment of the requirements For the award of the degree of

BACHELOR OF TECHNOLOGY
IN
ELECTRICAL & ELECTRONICS ENGINEERING

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(Permanently Affiliated to Jawaharlal Nehru Technological University, Kakinada, AP)

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Tamaram, Narsipatnam, Visakhapatnam-531113

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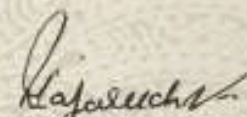## ELECTRICAL AND ELECTRONICS ENGINEERING

CERTIFICATE

This is certify that the project report entitled "CALCULATION OF STABLE CONTROLLER VALUES FOR SINGLE AREA ISOLATED POWER SYSTEM USING BOUNDARY LOCUS METHOD" is a bonafide work submitted by B RAMYA, CH BINDU MADHURI, B BHUVANESWARI, G POLAMAMBA DEVI and L ADVILA in partial fulfillment of the requirements for the award of degree of

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KAKINADA

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ABSTRACT

As power system is highly nonlinear in nature, its operating point changes continuously. So, the system performance is very poor, which affect the real and reactive power. Changes in real power mainly affect the system frequency and changes in reactive power mainly depend on changes in voltage magnitude. Thus, real and reactive powers can be controlled separately. The Load Frequency Control (LFC) controls the real power and the Automatic Voltage Regulator (AVR) regulates the voltage magnitude and hence the reactive power. Load Frequency Control (LFC) of interconnected system is defined as the regulation of power output of generators.

In general the fixed gain controllers are designed at nominal operating conditions and fail to provide best control performance over a wide range of operating conditions. So, to keep system performance near its optimum, it is desirable to track the operating conditions and use updated parameters to compute the control. In this project work a new method of finding stabilizing PID controllers has been proposed for LFC control system loop that is determined using "Boundary Locus Method"