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UKUWELA-POLGOLLA REMOTE TELEMETRY SYSTEM & FORECASTING WATER LEVEL OF POLGOLLA BARRAGE

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Damitha Amarasinghe

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Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master
of Science

Department of Electronics and Telecommunication Engineering


University of Moratuwa
Sri Lanka

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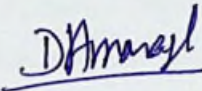
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DECLARATION

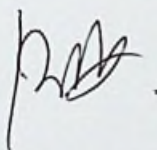
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Signature of the supervisor: 

Date 07.08.2013

Prof. Rohan Munasinghe
PhD, CEng, MIE(SL), MIEEE
Senior Lecturer
Department of Electronic and
Telecommunication Engineering
University of Moratuwa.

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ABSTRACT

In this project, a wireless telemetry system was designed and implemented to monitor the water level information of Polgolla barrage from the control room of Ukuwela power station.

Using the water level variation, a mathematical algorithm was developed to predict the time to reach minimum / maximum water levels.

The wireless telemetry system consists of three sub systems. They are

- I. Data transmitting unit located at Polgolla dam: The water levels are digitized by "Analog Input Modules" and fed the the Telemetry Module. The gate Open / Close status are directly fed to the Telemetry Module serialize these information and send the Data Radio. The Data Radio modulates these information and transmit in to the air.
- II. The Repeater Station located at Dunuwila: Receives this information and re transit after five seconds. (Store & Forward Repeater)
- III. Data receiving unit located at Ukuwela Power Station: The information received by Data Radio are sent to the Telemetry Module. It de-multiplexes the information and
 - a) Updates Analog Output modules so that these output modules can re-construct original water level information.
 - b) Outputs gate open / close status through relay contacts.

The mathematical algorithm uses two sets of input data.

- I. Water volume, $V(h)$ vs water level, h ; This is available as a table.
- II. Water level, $h(t)$; This is given by the above mentioned telemetry system.

This model can be run on a personal computer and can be used to estimate the time taken to reach maximum and minimum water level and raise alarms.

KEYWORDS: Ukuwela, Polgolla, Remote Telemetry, Prediction, Water Level

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