

# Readings in Contemporary Construction Technology and Management

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Muhammad Abu Eusuf



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# READINGS IN CONTEMPORARY CONSTRUCTION TECHNOLOGY AND MANAGEMENT

Edited by:

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# EFFECTIVENESS OF SUB STATION MONITORING SYSTEM

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## ABSTRACT

Most of power distribution companies such as Tenaga Nasional Berhad (TNB) employ Standard Average Interruption Duration Index (SAIDI) as a standard to ensure good quality of electrical power supply to consumers. Recently TNB has used a new Substation Monitoring System (SMS) focused primarily to reduce the number of interruptions to the supply, the duration of power outages and the areas affected by faults. Thus, the aim of the study is to identify TNB requirements its monitoring system and to explore the effectiveness of SMS in enhancing TNB services of electrical power supply to consumers. A questionnaire survey was conducted with technical staff of TNB Kelantan which 55 numbers of its sub-stations were installed with this new system. Their perception whether the new system is effective in enhancing their service quality were assessed. The study shows that the SMS system is an effective alternative compared to the conventional monitoring system.

**Keywords:** Substation monitoring system, electrical power supply, standard average interruption duration index (SAIDI), Supervisory Control and Data Acquisition (SCADA)

## INTRODUCTION

Various types of technology are used as monitoring and controlling systems to protect critical infrastructures and the most popular technology used in Malaysia is Supervisory Control and Data Acquisition (SCADA) system. SCADA system is a system that monitor and control a process or set of the process (Tim Yardley, 2008) and is used to remotely monitor the network infrastructure. Using SCADA system, the entire plant or individual pieces of equipment and their processes can be monitored by collecting a real-time data from various sensors throughout the network services. It is very crucial to monitor these network activities, so that the organizations can be