“SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM OF REC BANDA”

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ABSTRACT

Supervisory control and data acquisition (SCADA) allows a utility operator to monitor and control processes that are distributed among various remote sites. SCADA, is a system for gathering real time data, controlling processes, and monitoring equipment from remote locations. As more companies are implementing an open SCADA architecture through the Internet to monitor critical infrastructure components such as power plants, oil and gas pipelines, chemical refineries, flood control dams, and waste and water systems, vital systems are becoming increasingly open to attack. This report provides an overview of SCADA, outlines several vulnerabilities of SCADA systems, presents data on known and possible threats, and provides particular remediation strategies for protecting these systems.

PLCs are used in many different industries and machines such as packaging and semiconductor machines. Programs to control machine operation are typically stored in battery-backed or non-volatile memory. A programmable logic controller (PLC) or

programmable controller is a digital computer used for automation of electromechanical processes, such as control of machinery on factory assembly lines, amusement rides, or lighting fixtures. PLCs are used in many industries and machines. Unlike general-purpose computers, the PLC is designed for multiple inputs and output arrangements, extended temperature ranges, immunity to electrical noise, and resistance to vibration and impact.

Automation or automatic control is the use of various control systems for operating equipment such as machinery, processes in factories, boilers and heat treating ovens, switching in telephone networks, steering and stabilization of ships, aircraft and other applications with minimal or reduced human intervention. Some processes have been completely automated.

The biggest benefit of automation is that it saves labours; however, it is also used to save energy and materials and to improve quality, accuracy and precision. Automation has been achieved by various means including mechanical, hydraulic, pneumatic, electrical, electronics and computers, usually in combination. Complicated systems, such as modern factories, airplanes and ships typically use all these combined techniques.

Sectional electric drives were developed using control theory. Sectional electric drives are used on different sections of a machine where a precise differential must be maintained between the sections. In steel rolling, the metal elongates as it passes through pairs of rollers, which must run at successively faster speeds. In paper making the paper sheet shrinks as it passes around steam heated drying arranged in groups, which must run at successively slower speeds. The first application of a sectional electric drive was on a paper machine in

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