TRANSPARENT OPERATIONAL INFRASTRUCTURE FOR A DEREGULATED ELECTRICITY SUPPLY INDUSTRY (ESI) IN NIGERIA – A FACTOR IN IMPROVED OVERALL EFFICIENCY AND RELIABILITY

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ABSTRACT

Power system networks worldwide have been the property of Government over the years, until about 10 years ago. The need for efficient management of resources, efficiency of services and deregulation of most country's economies have made it imperative that the monopoly in power supply business is giving way to regulated participation of investors in it.

The structure, component and operations of power systems are complex and require coordinated and sequential activities on the components for its growth, sustenance and stability of supply. This is determined by load on the network and the location of those loads since loads if present without commensurate power availability often leads to system turbulence, especially if there is no means of instantly controlling the loads to match available power.

The method of controlling power system stability called SCADA (Scientific Control and Data Acquisition) is under focus in this study. Also, the importance of remotely determining the quantum of power flow (Telemetry) is x-rayed in the context of integrating it with SCADA

to explore and exploit their remote operational capabilities. Other advantages of these SCADA and Telemetry-planning, efficiency attainment and parameter measurement/indication will be spotlighted too.

Expansion of the Telemetry sub system of the automated system (SCADA and Telemetry), to cover revenue metering will also be given attention in this study. This will be targeted at complementing accurate energy measurement at the Grid substations with accurate energy delivery and billing for optimal revenue collection.

Thus this study will dwell on automated equipment control, energy measurement and billing. Firstly, a review of the existing system will be undertaken. Then, the modern trend in the area of automated control and metering will be examined. And finally, recommendations on how to utilize the integrated Automation infrastructure benefits towards improving the power system, revenue and ultimately in the proposed privatization of NEPA will be made

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