

Sanctioned Load Monitoring Using PLC and SCADA

Aniket V. Suryawanshi¹, Mahendra B. Gaikwad², Shubham R. Gaikwad³, Saurabh B. Nathe⁴
^{1,2,3,4}Student, Department of Electrical Engineering, Sanghavi College of Engineering, Nashik, India

Abstract—Power transmission is the very important factor of in day to day life; automation has been placed on power reliability and economy. In this paper we studied about automation by using PLC and SCADA using wireless system technologies system. PLC (Programmable Logical Controller) plays crucial role in automation field where many process are automated. On the other hand SCADA (Supervisory Control and Data Acquisition) act as human interfacing medium with machine where voltage, current and temperature variation are monitored and corrected if necessary power shutdown and load shading is major problem in modern trend it occurs due to lots of power wasted and sudden increase in load so we design a system which deals with these problems by monitoring and controlling the load or the power wasted through an automated process .we can used multiple energy meters and single PLC with a PC and SCADA facilitates communication between PC and PLC.

Index Terms— load monitoring, PLC and SCADA

I. INTRODUCTION

In our day to day life electrical energy become a very important part of our life. In that mainly two constraints are consider that is continuity and reliability. At domestic or industrial level consumers all having a fixed allowed load beyond that they does not use exceed load called as sanctioned load. Load in electrical circuit's means the Power consumed in that circuit. Hence, we developed an automated system which monitor and control the sanctioned load and reduce wastage of electricity. The utility provide a supply with fixed charges depend upon our load. If we crossed the limit of sanctioned load then service provider have a right to cut the supply and imposed the penalty on consumer. Suppose our sanctioned load is 1 KW then cost for that is Rs. 50 (50 for each KW/ month of sanctioned load). If our load goes 2 KW which exceeds your sanctioned load by one KW then our service provider will impose a penalty in your next bill. because when you connects a load which having consumption at large rate then it needs more power generation at that instant but immediate generation not possible and hence the power cuts and load shading are done which affects continuity and reliability of supply.

A. Advantages

1. Easy and effective of monitoring and control the load.
2. As system is totally automated human interference is less.
3. PLC & SCADA used in a combine so effective control can be done.

4. Electricity wastage and load shading can be reduced.

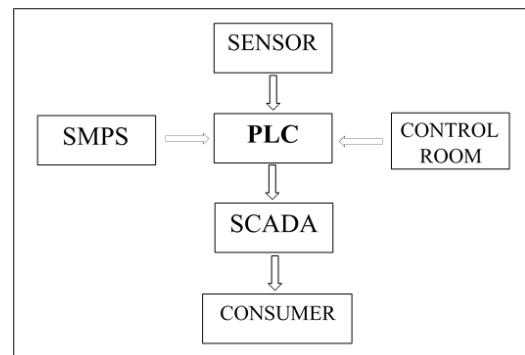


Fig. 1. Block diagram of the system

B. Disadvantages

The system become a somewhat complicated.

C. Applications

1. Industrial applications such as manufacturing food, metals etc.
2. In power system that is power transmission, power distribution etc.
3. At domestic level applications also used in commercial application.

II. CONCLUSION

Hence, we can design system by using PLC and SCADA to perform an automatic operation of monitoring and control of the sanctioned load. To provide a continuous and reliable supply we used SCADA and PLC together effectively. Due to which the problem of power cut and load shading get reduced and we get continue supply.

III. FUTURE SCOPE

1. The main aim of this project is to minimize the unwanted use of electricity.
2. Totally automatic energy management system can be achieve.

REFERENCES

- [1] Aditya Goel & Ravi Shankar Mishra, "Remote Data Acquisition Using Wireless – SCADA System", International Journal of Engineering (IJE), Vol.3 (1), 2008, pp. 58-65

- [2] D .Y. Raghavendra Nagesh, Sowjanya A and S.S TulasiRam, “ Real Time Decision Support for Energy Management “, Proceedings of the World Congress on Engineering 2008, Vol.1., pp. 5-9.
- [3] "Handbook for Electricity Metering" by The Edison Electric Institute-The Bible of electric meters.