Manuscript ID : 00000-48113

Source ID : 00000003

International Journal of Electrical Engineering and Technology

Volume 4, Issue 2, March-April 2013, Pages 187-201, Page Count - 15



# IMPLEMENTATION OF INTEGRATED LOAD MANAGEMENT SYSTEM WITH SCADA AT HINDALCO, RENUKOOT

Sharwan Kumar Jhajharia [(1)]

[(1)] Department of Electrical and Electronics Engineering, Manipal University Jaipur, Jaipur, Rajasthan, India.

**Abstract**

*Aluminium industries require bulk power for their metal extraction and manufacturing process. Manual operation and control of this process with large amount of power create technical difficulties and it becomes more difficult when process stations distributed over a large geographical area and smelter has the mix of diode rectifiers and thyristor rectifier systems. Hindalco has very large number of potlines and as well as a good mix of power supply. The smelter is being fed from a capative thermal power plant and connected with 132 KV grid interconnections. The auxiliary power for the smelter, aluminium plant and as well as rolling mills are being taken from same power lines feeding the smelting rectiformers. In case of grid disturbance, it was difficult to manage the network and if the system is island mode, the control of frequency and voltage were extremely difficult and the frequency used to go into the unstable region resulting in the tripping and black outs. To manage such bulk power in shorter time, SCADA with intelligent load management system was installed and commissioned in December, 2007. This paper presents the implementation of SCADA with Intelligent load management scheme at HINDALCO , Renukoot to meet the challenges of load shedding and island load management to keep the system within satisfactory operational limits.. Simulation of two case studies With Disturbance Fault Recorder( DFR) are also performed to demonstrate the advantage of an intelligent fast load shedding system with SCADA over the conventional load shedding methods in the past.*

**Author Keywords**

Intelligent Load shedding (ILS), DFR , Load Shedding (LS), Power Management System , SCADA , Fast Load Shedding (FLS)

**Index Keywords**

Aluminium industries, Metal extraction, HINDALCO

**Acknowledgement**

Author acknowledges HINDALCO Industry and M/S ABB Ltd. for supporting and giving permission to carry out the work. He is also thankful to Mr. K. N. Pandey for his suggestions to improve the article.

**ISSN Print:** 0976-6545
**ISSN Online:** 0976-6553
**Source Type:** Journals
**Document Type:** Journal Article
**Publication Language:** English
**DOI:**
**Abbreviated Journal Title:** IJEET
**Access Type:** Open Access
**Publisher Name:** IAEME Publication
**Resource Licence:** CC BY-NC
**Major Subject:** Physical Sciences
**Subject Area classification:** Engineering and Technology
**Subject area:** Electrical Engineering
**Source:** SCOPEDATABASE

**Reference**