



**Complex Wave Form Analyser**

High Voltage Division of CPRI, Bangalore has developed a “Complex Waveform Analyser”. The



attractive and innovative features of this new development is the ability of the equipment to store assorted waveforms of the kind Lightning impulse voltage, Lightning impulse current, Ring wave, during testing of Electrical equipment and accessories like energy meters, MCB's Varistors, SPD's etc. as per IEC using a combination wave generator. An exclusive feature of this

development is the ability to record and analyze AC voltage waveforms also. The equipment is having a high speed digitizer (sampling rate of 100MS/sec) and two measuring channels. An in house developed built in unique software makes the system very user friendly. As it has versatile features, it stands out as a unique design and development of its kind.

**Soil resistivity measurement at Mangalore Refinery Petrochemicals Limited**

Mangalore Refinery Petrochemicals Limited, MRPL has plant near Mangalore, which has built many circular shaped outdoor tanks to be used at storage tanks for Crude oil, Flushing oil, Sweet Naptha, Vacuum Gas oil, Fuel oil, Motor Spirit, Kerosene,

Aviation Turbine Fuel, High Speed Diesel, Bitumen, LPG, Mixed Zylene, Wet Slop etc, DM water. The total numbers of tank were 120. Earth tank was provided with earth electrode around the circumference of the tank and each of these electrode is connected to earth pit using earth strip. There were total 750 earth electrodes. Earth resistance was measured at each of these 750 points. At each place three reading measurements were made. E.B. Curdts method given IEEE Std 81-1983 was adopted in view of space constraint for placing current/potential electrode. The current electrode was placed at a distance of 40, 50 and 60 meters from earth electrode with potential electrode being placed at 0.618 times distances and average of these three reading was taken.

The measurements was completed in stipulated 25 working days. On the average, most of the values were below 1 ohm. The points where values are more than 1 ohm have been brought out. The complete measurement has been compiled. The report has been issued to client within one week.

**One year course on Testing and Maintenance of Electrical Equipment**

The course on ‘Testing and Maintenance of Electrical Equipment’ is mainly designed for practicing engineers with a view to upgrade their practical skills. This National level course will help in developing a cadre of competent engineers.

The course mainly emphasizes on Testing and Maintenance of Electrical Equipment. Broadly the following topics are covered in Testing and Maintenance: Transformers, Insulating Oils, Circuit Breakers, High Voltage Cables, Current Transformers, Remaining Life Assessment of Transformers, and Protective Relays. Also, the course covers important aspects of Substation and associated equipment, Power System Grounding and Transmission lines.

*For details contact:  
Mr Suhas S B, Joint Director, CPRI,  
Prof Sir C V Raman Road, Sadashivnagar PB No. 8066,  
Bangalore 560 080.  
Ph: 080 2360 2329, Fax: 080 2360 1213,  
E-mail: suhas@cpri.in*

Course Schedule				
SI No.	Schedule/Duration	Activities	Practical	Training
Module -1	April 2009 - September 2009	Initiation Programme at CPRI Self Study Contact Classes at CPRI Examination	One Week 20 Weeks 2 Weeks 3 Days	Visit to laboratories
Module -2	October 2009 - March 2009	Initiation Programme at CPRI Self study Contact Classes at CPRI Comprehensive Training Programme in CPRI Labs Examination	One week 20 Weeks 2 Weeks 4 Weeks  3 Days	Field visits