Power Quality -
An Issue that needs address;

APQI- A platform to change attitude towards PQ

Interactive Workshop

On Harmonics and Power Quality

Aurangabad

28th November 2015.

Mr Manas Kundu

A presentation of

APQI

International Copper Association India

Copper Alliance

Asia Power Quality Initiative

- Program initiated in Asia with the background of the European Experiment (LPQI) – Continuing Professional Development

- A ***neutral collaborative platform*** shared by National Support Network (**NSN**) Partners to promote **education and awareness** and facilitate policy changes.
- **Objective**:
  - help industries in Asia **address Power Quality issues** as a means to enhance their competitiveness in terms of better production output quality, reduced production costs, reduced production line interruption and batch losses.

  - **Building up capacity** of industry / service sector in identifying and addressing PQ issues as a means to enhance their continuous quality delivery

  - Facilitate policy changes and market transformation towards '**Safe and Quality Power for All**'.

Background

Asia Power Quality Initiative (APQI) is an initiative for capacity building, education and awareness on power quality.

- APQI is jointly promoted by ICAI with ICA and the Electrical and Electronics Institute, Thailand, the University of Bergamo (Italy) and the European Copper Institute (ECI, Belgium).

- APQI aims to create an independent platform that would build awareness and capacities on issues related to Power Quality. The initiative has local chapters in as many as seven Asian and Southeast Asian countries. In India, the ICAI leads the initiative.

- APQI has been established with initial financial support from the European Union's Asia-Invest programme. The initiative builds on the success of the Leonardo Power Quality Initiative (LPQI) established in Europe by the European Copper Institute, Belgium.

Mandate

The Initiative works towards engaging all stakeholders affected by Power Quality or lack of it.

- It engages with industry, services, government, energy managers/auditors and consumers - on the significance of power quality in the economy.
- APQI seeks to make power quality a key part of all discussions on power.
- It works with a wide range of academicians, officials, media houses, engineers and energy professionals in India, China, Thailand, Malaysia, Indonesia, Philippines and Vietnam.
- Also, APQI's outreach programmes are targeted at the countries of the Gulf Cooperation Council region and Sri Lanka.

Method

APQI provides a neutral platform for exchange of knowledge and best practices concerning power quality.

- Involves electricity distribution utilities as core partners.
- Build capacity and create awareness through:
  - ✓ Compilation and dissemination of case studies
  - ✓ Dissemination of information through the media and Web
  - ✓ Conferences and seminars, Training workshops and Exhibitions
  - ✓ Training curriculum and certification and other Capacity building tools
- Connect with policy and standard making bodies through surveys, technical support and enhancing exposure to the European Experience.
- Partnering with OEMs, Industry federations, professional associations, institutes of engineers, universities, research institutes, and laboratories

How PQ Affects Us

Measure of Power Quality

Deviation of waveform of supply voltage or load current from sinusoidal waveform at rated frequency with amplitude corresponding to the rated rms value for all three phases in a three phase system.

Effects of Poor Power Quality

Technical Aspects

1.Sudden short duration deviation
2.Impulsive and oscillatory transients
3.Voltage dips/ sags
4.Short interruptions
5.Harmonics and flicker
6.EMI
7.Losses & heating in electric equipments

Effects of Poor Power Quality

Commercial Aspects

1.Damage to capital intensive equipment
2.Compromise in safety aspects
3.Loss of reliability of operations
4.Economic loss
5.Reputational loss
6.Productivity loss
7.Lower life span of electrical equipment

Causes of Poor Power Quality

1.Usage of sub-standard material in construction of electrical equipment
2.Lack of standards/ low standards for power equipment
3.Single minded focus on costs savings at the expense of quality

APQI the Asian Platform supported by international educational programme (Leonardo) regarding Power Quality

- Scope is the non-residential sector :
  - tertiary and industrial buildings
  - critical services
- Core purpose of the partnership creation :
  - a strategic & operational alliance to promote, strengthen & facilitate education on PQ issues, solutions & their implementation

Educational Objectives

- To help the professionals :
  - Recognise
  - Diagnose
  - Evaluate power quality, power utilization and EMC problems

in privately-operated, low/medium-voltage electrical installations

APQI now reaches over 50,000 individuals per year

Regulators

Academics

Electricity & Energy professionals
- Design engineers
- Qualified contractors,
- Installers…

End-users (Utility / Industry)
- Maintenance professionals
- Building & facility managers
- Property developers
- Architects

APQI already reaches 7 countries

Learning from APQI : A focus around 3 Missions

A reference for all PQ matters in Asia	Education & training fine tuned for individuals	Lead the dynamic through adequate knowledge management & E-dissemination
A network of European /Asian PQ experts (standardization/certification body participation)	Print publications	Website
		Forums
	Electronic library	Seminars
		Webinars
Leads appropriate PQ study (PQ Survey, PQ Regulation report)		

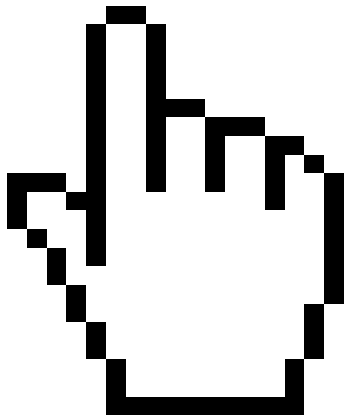
Ensuring High Power Quality is every professional's responsibility

High Power Quality benefits all

It increases productivity, profitability & competitiveness,
It improves customer relationship & ensures better employee loyalty

Visit : **www.apqi.org**

Suggestions

- Stakeholders may constitute a forum on PQ to address related issues.
  - Cost of Poor PQ
  - Taking support of CPD under APQI platform
  - Benchmarking of PQ regulations at various States / utilities
- DISCOMs may be proactive to display PQ performance data in public domain.
- Utility may have to identify polluting consumers by putting up monitoring equipments and Harmonic mitigation effort by such consumers have to be monitored
- PQ issues may be specifically addressed in ARR of Licensees by RCs

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http://www.apqi.org
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