

Report on 2004 PCI India Conference held on November 9 & 10, 2004
at Silver Oak Hall, India Habitat Center, New Delhi, India

2004 PCI India Conference with Petroleum and Chemical Industry Committee (PCIC) of Industry Applications Society (IAS) as technical sponsor was organized by the IEEE



PES-IAS Delhi Chapter with the support of IEEE Delhi Section at Silver Oak Hall of India Habitat Center, New Delhi on November 9 & 10, 2004. It had in all 57 attendees (including 8 from abroad), 10 who didn't make it though registered and 3 honored guests present during the inauguration only. They represented academia (faculty members and students) as well as industries. Participants included 26 IEEE Members at different level. Out of 41 papers selected, besides 1 moved essentially as the state-of-the-art lecture, in all 36 papers were presented in 8 sessions. Out of these as many as 19 papers have been recommended after scrutiny by local committee for peer review for publication in Transaction / Magazine of IAS. There were 3 sessions on Power Quality Issues, 2 each on Drives and

Industrial Power System Design / Application, 1 on Electrical Safety, Standards and Regulations. Other than the state-of-the-art lecture on 'Power Quality and Harmonics' by the PES Distinguished Lecturer Dr. Rao S. Thallam, FIEEE, of Salt River Project, Phoenix, AZ, USA on the first day, Conference had on the second day a tutorial on 'System Grounding and Ground Fault Protection' by the duo - Mr. John P. Nelson, FIEEE, of NEI Electric Power Engineering, Inc., Arvada, CO, USA and Prof. Pankaj K. Sen of Colorado School of Mines, Golden, CO, USA.

The Conference was inaugurated by Mr. Harbans L. Bajaj, FIEEE, Chairman, Central Electricity Authority, Ministry of Power, Government of India. In the inaugural session on the first day, Mr. C. Satish, Advisory Committee Chair of the Conference gave an account of PCI Conferences held primarily in North America and most recently elsewhere while Dr. Subrata Mukhopadhyay, Executive Chairman of the Conference talked about organizing the present one in India. Prof. B. P. Singh, Past Chairman of IEEE PES-IAS Delhi Chapter, in his address as the keynote speaker touched upon development of adjustable speed drive, measures for improvement in power quality, application of self-excited induction generator for isolated supply system and static compensator for loads with specific reference to petroleum industries. Mr. Bajaj while inaugurating stressed the need of such Conference considering the topics from the point of view of utilization of electricity efficiently and also for the quality of supply system, more so in the background of massive plan of generation addition in the current and next five-year plan to provide electricity for all in India.



In the state-of-the-art lecture on 'Power Quality and Harmonics' Dr. Rao S. Thallam covered the issues of voltage sag and swell in utility network during different operating conditions, assessment, thorough analysis and mitigation of the same. While dealing with harmonics, the effect of use of power electronics in system and other causes were

elaborated with ways and means of solving the problems for acceptability as per IEEE and IEC standards.



Tutorial of Nelson & Sen gave the participants a thorough understanding of system grounding design. Based on analysis requirement for neutral grounding of generator, motor ground fault protection, low and medium voltage system grounding, ground fault and surge protection were described.

In the technical sessions papers presented discussed around adjustable speed drives and associated controllers as simulated and experimented to validate claims, application of power conditioners, such as, active and passive filters, converters, static compensators to improve power quality and mitigate harmonics. Safety standards, industrial power system design and management for petroleum industry, health monitoring of equipment deployed were the other predominant topics covered.

Two-day Conference ended with a panel discussion. Just before that Mr. Satish was presented with the IAS 2003 Meritorious Services Award for Region 10 by Mr. Richard H. Hulett, FIEEE, on behalf of IAS. Panel consisting of Subrata Mukhopadhyay, C. Satish, Richard H. Hulett, B. P. Singh, Bhim Singh, Alok P. Mittal and Pankaj K. Sen expressed their views on the utility of such Conference. Participants too expressed their satisfaction and suggested for further improvement aiming at sharing and dissemination of knowledge. General consensus was that quality of papers was extremely good which in fact was reflected through recommendation to IAS of about 50% of them for peer review for publication. However, effort should be made to get more participation from industry, might be through presentations jointly by academia and industry. It was also felt necessary to have tutorial with more details about certain topics in the areas of grounding, protection, etc. in future with the active involvement of industry. Though compared to PCIC Conference in North America, one in Delhi had low attendance (of about 10% only), it was just the beginning. Suggestions were given to get patronage of heads of petroleum industries in India and associations for attracting industries who could come out with their experiences in implementation of designs engineered by them, problems being encountered in operation, etc. It was opined that such type of Conferences should be organized at least once in two years. It could be made a common forum for users, suppliers, manufacturers, with valuable support coming from academia, and students encouraged and supported to participate. For researchers finding difficulty to present paper abroad due to financial constraint, it would provide an opportunity when such Conferences could be held in India on regular basis. As the theme would be centering round the usage of electricity in petroleum and chemical industries, improvement in performance of drives, fault protection, safety of personnel and equipment, achievement of power quality in supply system and its design should be focused in such Conferences.



Proceedings of 2004 PCI India Conference are available – India: Rs.150 for CD & Rs.350 for hard copy; outside: \$50 (CD or hard copy) *inclusive of postal charges*; for details contact Dr. S. Mukhopadhyay (pesdelhi@ieee.org).