

**Department of Electrical Engineering &
IE Student Chapter of SKIT**

Swami Keshwanand Institute of Technology, Management & Gramothan, Jaipur
Organized

**AICTE SPONSORED
Two Days National Conference
ON
“Power System Operation & Energy Management : Vision
2020”**

16th – 17th February, 2013

In Association with

**The Institute of Engineers (India)
Rajasthan State Centre, Gandhi Nagar, Tonk Road, Jaipur - 302015**

**Venue :
Swami Keshwanand Institute of Technology, Management & Gramothan,
Ramnagar, Jaipur**

SUMMARISED REPORT

Two days national conference on “**Power System Operation & Energy Management**” was organized on 16th – 17th February, 2013

INAUGURAL SESSION (16th February, 2011)

**Venue: Seminar Hall, Mechanical Block, Swami Keshwanand Institute of
Technology, Management & Gramothan, Ramnagar, Jaipur**

Chief Guest : **Dr. Dinesh Kumar Goyal**, Principal Secretary, Horticulture
Department, Govt. of Rajasthan,
Former Scientist, Department of Atomic Energy, Govt. of India

Guest of Honour : **Shri B.N. Saini**, Director (Operations)
Rajasthan Rajya Vidyut Prasaran Nigam Limited, Vidyut
Bhawan, Janpath, Jaipur – 302005

Dignitaries on the Dais:-

- Chief Guest** : **Dr. Dinesh Kumar Goyal**, Principal Secretary, Horticulture Department, Govt. of Rajasthan,
Former Scientist, Department of Atomic Energy, Govt. of India
- Guest of Honour** : **Shri B.N. Saini**, Director (Operations)
Rajasthan Rajya Vidyut Prasaran Nigam Limited, Vidyut Bhawan, Janpath, Jaipur – 302005
- Sh. Surjaram Meel** : Chairman, SKIT M&G, Jaipur
- Sh. Jaipal Meel** : Director, SKIT, Jaipur
- Dr. S. L. Surana** : Director (Academics), SKIT, Jaipur
- Dr. S. K. Calla** : Principal and Director, Development & Welfare , SKIT,
Chairman, Institute of Engineers (India),
Ex-CMD, RVUNL, Jaipur

The programme was jointly organized by Swami Keshwanand Institute of Technology, Management & Gramothan and Institute of Engineers (India).

The program started with lamp lighting. After that a floral welcome was organized for all the dignitaries sitting on the dais.

Sh. Jaipal Meel, Director, SKIT welcomed the Chief Guest, Dr. Dinesh Kumar Goyal. **Dr. S.K. Calla**, Principal, SKIT welcomed Guest of Honour Sh. B.N. Saini.

The welcome note was delivered by the Chairman of the Institute **Sh. Surjaram Meel**. He stated that to contribute to the electrical power sector development and generation of electrical power, every individual needs to pay his bit, by saving electricity and stop it's wasteful utilization.

After that **Dr. S.L. Surana** addressed the audience about the objective of the conference. He told a brief history of electrical power infrastructure development over the world. It included every important development starting from the discovery of concept of GSS (Grid Sub Station) by T.A. Edison to the present scenario of the Indian electrical power sector. He also told about Smart Grid and it's implementation in Northern India and told about the ongoing discussions in the world, on the Installation of HVDC networks.

Guest of Honour, Sh. B.N. Saini, Director (Operations), Rajasthan Rajya Vidyut Prasaran Nigam Limited, Jaipur highlighted the present status of the Rajasthan electricity board in Indian power sector. He told about the progress of the electricity sector in Rajasthan over

the years, like the development of the GIS (Gas Insulated Substation), Jaipur, the establishment of the HVDC link, the penetration of renewable energy sources in the electricity market and the existing super critical power plants. He also told the audience about the upcoming Ultra Mega Power plant projects in Rajasthan. After that he discussed the present problems and challenges faced by the Rajasthan Government. He told that with the expansion of the power sector a large number of vacancies will be created in the coming years, increasing the youth participation in further research in power sector.

Chief Guest, Dr. Dinesh Kumar Goyal, talked about many facets of the Indian Power Sector. He highlighted the present status of the Indian Electricity market, deregulation of electrical power sector, emergence of private owners, green energy, the incorporation of the renewable energy sources into the national energy sector, carbon credits etc. He told the students to do their M.Tech. and Ph.D on these topics so as to contribute to power sector development.

Sh. Jaipal Meel , Director, SKIT, Jaipur also highlighted the need of each individual for saving electrical energy, due to the huge gap between the demand of electrical power and it's generation because of population growth. He emphasized it by saying that the amount of energy saved is equivalent to the amount of energy generated.

Dr. S.K. Calla, Principal and Director, Development & Welfare, SKIT, Jaipur, and Chairman, IE (India), welcomed all the dignitaries and gave the vote of thanks to the Chief Guest **Dr. Dinesh Kumar Goyal**, and the Guest of Honour **Shri B.N. Saini**, to have accepted the request to attend the conference, and give their valuable guidance to the students.

The Inaugural session was concluded at 11:45 Hrs. The function was very well attended by about about 250 persons.

Saturday 16th February, 2013

Keynote Address : (12:30 – 13:30 Hrs.)

Two Keynote Addresses were delivered after the inaugural session, as follows:-

- 12:30 - Prof. K.R. Niazi**, Head, Electrical Engineering Department, MNIT
- 13:00 - Dr. S. K. Calla**, Principal and Director, Development & Welfare , SKIT, Chairman, Institute of Engineers (India), Ex-CMD, RVUNL, Jaipur

TECHNICAL SESSION – I (13:30 – 14:30 Hrs.)

Chairperson : Prof. K.R. Niazi, Head, Electrical Engineering Department, MNIT

Technical Presentations

S.No.	Title of Paper	Author/Authors
1	Fault Analysis of an Unbalanced Multiphase Distribution System having Renewable Distributed Generation Sources, using symmetrical components	Smriti Jain, Dr. S.L.Surana
2	Active Power Control Using Classical Controllers	Saurabh Sharma, Dr. H. P. Tiwari, Gulshan Sharma, Khushboo Sharma
3	Linear Programming Approach to Economic Dispatch Using Piecewise Linear Cost Curves-An Overview	Ankita Gupta, Anju Rayal, Shahrukh Vasid
4	Power System Protection Using Time-Frequency Psychiatry and Pattern Detection	Mr. Abhishek Gupta, Mr. Hemant Sharma, Mr. Deepak Pareta, Gaurav Sharma

The Technical Session-I was followed by lunch, before the starting of the Technical Session-II.

TECHNICAL SESSION – II (15:15 – 16:45 Hrs.)

Chairperson : Dr. Jayashree Vajpai, Assoc. Prof., Electrical Engineering Department, MBM College, Jodhpur

Technical Presentations

S.No.	Title of Paper	Author/Authors
5	Role of Power Electronics in Renewable Energy Sources	Rohit Malav, Ishwar Lal, Dr. Nitin Gupta
6	Optimal Capacitors Placement for Loss Minimization in Radial Distribution System	Sarfaraz Nawaz, Sunil Agarwal, Vaibhav Mishra
7	Innovation & Deregulation of Renewable Energy Sources in Rajasthan Power Sector Unit	Surendra Kumar Sharma, Lekhraj Kumawat, Harsh Jain, Ankur Gupta
8	Improved LVRT Capability and Power Smoothing of DFIG Wind Turbine Systems using Dynamic Voltage Restorer	Mal Chand Sharma, Manish Gupta, Akash Saxena
9	Microgrid: The Future of Modern Power System	Disha Bijlani, Sarfaraz Nawaz
10	Importance of Higher-Order Statistics For the Categorization of Power Quality Improvement	Ravi Kumar, Deepak Pareta, Chandan Singh
11	Importance of FACTS Devices in Power System & Comparative Performance Analysis of SVC STATCOM & TCSC	Sanjeev Kumar Rajoria, Manoj Kumawat, Manish Nain

Sunday 17th February, 2013

Keynote Address :

09:30 - **Dr. Nitin Gupta**, Assist. Prof., Electrical Engineering Department, MNIT, Jaipur

TECHNICAL SESSION – III (10:00 – 11:00 Hrs.)

Chairperson : Dr. Nitin Gupta, Assist. Prof., Electrical Engineering Department, MNIT, Jaipur

Technical Presentations

S.No.	Title of Paper	Author/Authors
12	Application of Modulated Power Filter Compensator Based on Thyristor in Reactive Power Compensation and Enhancement of Power Quality	Avantika Sharma, Rupali Rana, Abhishek Chopra
13	Network Reconfiguration in Distribution System with Distributed Generation	Akanksha , Sarfaraz Nawaz, Ankush Tandon
14	Application of Automatic Differentiation in Power System Analysis	Pradeep Singh, Dr. Ramesh Kumar Pachar
15	Study of Hybrid Power Generation System using Wind and Solar energy	Gourab Banerjee, Shivani Kanoongo, Anil Boyal
16	An Under-frequency based Islanding Scheme to Prevent Power System Blackout	Dr. M. P. Sharma , Vikash Koundilya , A.K. Sharma
17	3PV TECHNOLOGY	Sanmit Jain, Shubham Jain, Ashwani Darji
18	Non-linear BBO for valve-point Economic Load Dispatch Problem	Kunal Thanvi, Manoj Kumawat, Shivani Kanoongo, Purna Jain
19	Vibration Analysis of induction Motor using Wavelet Decomposition	Tarun Naruka , Ruchika Lamba , Moon Inder Singh

The Technical Session-I was followed by High Tea, before the starting of the Technical Session-II.

TECHNICAL SESSION – IV (11.45 – 13.00 Hrs.)

Chairperson : **Prof. C.M. Arora**, Retd. Professor, Department of Electrical Engineering, MNIT, Jaipur

Technical Presentations

S.No.	Title of Paper	Author/Authors
20	Wind Energy Scenario in India-Recent Developments, Challenges and Future Prospects	Dr. S.L.Surana, Smriti Jain
21	Implementation of Soft-Switching Boost Converter with a Resonant circuit	Prof R. A. GUPTA,Ritu Jain, Ankush Tandon
22	Innovation & Deregulation of Renewable Energy Sources in Rajasthan Power Sector	Surendra Kumar Sharma, Lekhraj Kumawat, Harsh Jain, Ankur Gupta
23	Application of FACTS Devices in Improvement of Total Transfer Capacity of Long Transmission Line	Bhanu Pratap Soni, Akash Saxena, Manish Gupta
24	Estimation of Optimal Location and Number of Voltage Sag Monitors in Distribution Network	Vivek Prakash
25	Scenario of Non-Conventional Energy in India: Present and Future	Akshat Mangal, Rohit Kr. Bharadia, Er. B.P. Soni, Er. Rakesh Meena
26	Smart Grid: An Overview	R.A.Gupta, N.K.Gupta , Manoj Kumawat

VALEDICTORY SESSION (13:00 to 14:30 Hrs.)

Chief Guest : **Prof. R.P. Yadav**, Vice Chancellor, RTU, Kota

Dr. S. Surana : Director (Academics), SKIT, Jaipur

Brief report of seminar:

Brief report of the Two Days National Conference was presented by four repertoires Mr. Manoj Kumawat, Mrs. Vishalakshi Pareek, Mrs. Smriti Jain and Ms. Pooja Jain, who summarized the events the each Technical Session.

Vote of Thanks :

The vote of thanks was presented by Dr. Ramesh Pachar. He expressed gratitude to all the dignitaries for accepting the request to join with us in the National Conference. He thanked Dr. S.L. Surana, Dr. S.K. Calla for their presence and guidance. He thanked the

Organising Secretary Mr. Sarfaraz Nawaz, Coordinator Mr. Ankush Tandon, for making arrangements for the conference. He also thanked all faculty members, members of different committees, student coordinators, electrician and all the concerned people associated with it. Lastly he thanked the audience for patiently listening and learning from the conference.

Distribution of Certificates:

The Certificates were distributed by the Chairperson of the Technical Session IV, **Prof. C.M. Arora** and **Dr. S.L. Surana** to all participants who had presented technical papers in the Conference.

RECOMMENDATIONS:

Following recommendations were made by the experts:

1. Power Electronics Application should be made the zen of integrated power development sector for its long term sustainability.
2. Flexible Alternating Current Transmission System (FACTS) devices should be used in the deregulated power sector for grid stability.
3. The smart grid platform should be used to provide adequate emergency power for the consumers and for safeguarding/preventing the complete blackout of interconnected power systems.
4. HVDC links should be used for long-distance transmission and for interconnecting HVAC grids for sustainable generation. DC grids provide increased flexibility and reliability.
5. Shunt FACTS devices should be used for controlling transmission voltage, power flow, reducing reactive losses and damping of power system oscillations for high power transfer levels.
6. FACTS controllers in power systems should be installed at appropriate places for better controllability. FACTS controllers should be used in power electronic circuit equipment to control current and power etc. for better performance in generation, transmission and distribution of electrical energy.
7. Catastrophic failures in the power transformers and tripping of power system relays by magnetizing inrush of the current should be avoided. Second harmonic component present in the inrush current should be used as a discrimination factor between fault and inrush currents.
8. Thyristor controlled shunt connected compensation devices should be used for dynamic power compensation and enhancement of real power transmission capacity.

(Dr. G.S. Dangayach)
Hony. Secretary

Ref: IE(I)/RSC/-J3/Report-2011/AIS-ELDB/

The IE(I), RSC
Dated: 26th February, 2013

The Director(Technical)

The Institution of Engineers (India)
8, Gokhale Road,
KOLKATA – 700 020

Subject- Report of AICTE sponsored National Conference in Association with Institute of Engineers, India, on : **“Power System Operation & Energy Management : Vision 2020 (PSOEM-2013)”** on 16th – 17th February, 2013 at Seminar Hall, Mechanical Block, SKIT, Jagatpura, Jaipur

Dear Sir,

Please find enclosed herewith the report of AICTE sponsored National Conference in Association with Institute of Engineers, India, on : **“Power System Operation & Energy Management : Vision 2020 (PSOEM-2013)”** on 16th – 17th February, 2013 at Seminar Hall, Mechanical Block, SKIT, Jagatpura, Jaipur

Thanking you,

Yours faithfully

(Dr. G.S. Dangayach)
Hony. Secretary

Enclosed :
1. Report
2. Recommendations
3. Photographs for the Seminar

Copy to **Dr. Vimal Prakash V.**, Chairman, ELDB, TC 24/1981, ‘RAJENDRA’, Varkala Radhakrishnan Lane, Thycaud, Thiruvananthapuram-695014 vimalprakashv@yahoo.co.in