



SARI / Energy

Engineer's Training of Trainers – Operation & Maintenance of Sub-station Equipment

November, 23 – December, 19, 2009

NPTI, Faridabad, Haryana, India



PA Consulting Group



WEEK 1 November 23 – 28, 2009

Day 1 Monday, November 23, 2009

10:00 – 11:00 Registration

11:00 – 11:30 Tea Break

Session on Power Sector Overview by Mr. Sanjay Jadhav, Senior Consultant, NPTI

11:30 – 13:00 Structure of Power Sector – Generation, Transmission & Distribution & Overview of Global Power Sector including Supply & Demand

Session on Key Issues of Power Sector and Importance of Power Distribution Sector by Mr. Sanjay Jadhav, Senior Consultant, NPTI

13:00 – 14:00 Lunch

14:00 – 15:30 Brief Overview of Key Issues and Challenges facing the Power Sector

15:30 – 15:45 Tea Break

15:45 – 17:00 Importance of Power Distribution Sector & Components of Power Distribution System

Day 2 Tuesday, November 24, 2009

Session on Distribution Practices by Mr. Sanjay Jadhav, Senior Consultant, NPTI

10:00 – 11:30 Basics in Distribution Practices/Governance

11:30 – 11:45 Tea Break

11:45 – 13:00 Overview of Distribution Management System

13:00 – 14:00 Lunch

14:00 – 15:30 Distribution - Asset Management & Commercial Management

15:30 – 15:45 Tea Break

15:45 – 17:00

Inauguration

Welcome Address: Dr. N. S. Saxena, Director General, NPTI

Opening Remarks: Mr. S. Padmanaban, Regional Program Director, SARI/Energy & Senior Advisor, Energy Division, USAID.

Inaugural Address: Mr. V. N. Kaul, Director(HR), Power Grid India

Vote of Thanks : Mr. Michael Hajny, Chief of Party, P A Consulting Group

Group Photograph

Day 3 Wednesday, November 25, 2009

Session on Distribution Planning by Ms. Anjali Chandra, Director, CEA

- 10:00 – 11:30 Distribution Network Planning – Rural Un-electrified Areas
- 11:30 - 11:45 Tea Break
- 11:45 – 13:00 Distribution Network Planning for Growing Urban Agglomeration
- 13:00 – 14:00 Lunch

Session on Technical & Commercial Features of Distribution System by Mr. M. K. Gupta, Consultant, NPTI

- 14:00 – 15:30 Understanding Technical Aspects of Distribution
- 15:30 – 15:45 Tea Break
- 15:45 – 17:00 Understanding Commercial Aspects of Distribution including Metering, Billing & Revenue Collection

Day 4 Thursday, November 26, 2009

Session on Power System Studies by Mr. Sandeep Dixit, Assistant Director, NPTI

- 10:00 – 11:30 Introduction of Power System Studies - Load Flow Studies
- 11:30 - 11:45 Tea Break
- 11:45 – 13:00 Power System Stability
- 13:00 – 14:00 Lunch

Session on AT & C Losses in Distribution by Mr. Naveen Kapoor, General Manager – Distribution, Feedback Ventures Pvt. Ltd.

- 14:00 – 15:30 Reasons Attributed to High Distribution Losses Reduction of Technical & Commercial losses
- 15:30 – 15:45 Tea Break
- 15:45 – 17:00 Loss & Theft Control Strategies

Day 5 Friday, November 27, 2009

**Session on Operation & Maintenance Policy in Distribution by Mr. N. R. Halder,
Deputy Director, NPTI**

10:00 – 11:30 Introduction, Corrective Maintenance Statutory Maintenance

11:30 – 11:45 Tea Break

11:45 – 13:00 Routine and Preventive Maintenance

13:00 – 14:00 Lunch

**Session on IT in Distribution by Mr Sudhanshu Gupta, Senior General Manager,
Feedback Ventures Pvt. Ltd.**

14:00 – 15:30 IT in Distribution Sector

15:30 – 15:45 Tea Break

15:45 – 17:00 IT in Distribution Sector

Day 6 Saturday, November 28, 2009

EID HOLIDAY

WEEK II November 30 – December 4, 2009

Day 7 Monday, November 30, 2009

Session of Personality Development by Ms. Shikha Kapoor, Senior Consultant, NPTI

- 10:00 – 11:30 Self Management, SWOT Analysis
- 11:30 – 11:45 Tea Break
- 11:45 – 13:00 Knowledge Management, Tools for Success
- 13:00 – 14:00 Lunch

Session of Communication skills by Ms. Manju Mam, Dy. Director, NPTI

- 14:00 – 15:30 Communication Process, Barriers to Communication
- 15:30 – 15:45 Tea Break
- 15:45 – 17:00 7 Cs of Communication, Effective Communication Body Language and Posters, Oral Comprehension

Day 8 Tuesday, December 01, 2009

Session on Presentation Techniques by Ms. Manju Mam, Dy. Director, NPTI

- 10:00 – 11:30 Presentation Techniques
- 11:30 – 11:45 Tea Break
- 11:45 – 13:00 Report Writing
- 13:00 – 14:00 Lunch

Session on Motivation by Ms. Shikha Kapoor, Consultant, NPTI

- 14:00 – 15:30 Self Motivation, Theories in Motivation, Motivation for Success
- 15:30 – 15:45 Tea Break
- 15:45 – 17:00 Strategic Lateral Thinking – Creativity & Innovation
Q&A Session

Day 9 **Wednesday, December 02, 2009**

Session on Time Management by Ms. Farida Khan, Senior Consultant, NPTI

- 10:00 – 11:30 Time Management Skills 10 Commandments of Time Management & Procrastination
- 11:30 – 11:45 Tea Break
- 11:45 – 13:00 Preparation of Time Logs, Creating Efficiency etc.
- 13:00 – 14:00 Lunch

Session on Leadership Development by Ms. Indu Maheshwari, Dy. Director, NPTI

- 14:00 – 15:30 Overview Theories & Methods of Leadership, Managers Vs Leaders Competencies/Traits, Leadership Factors
- 15:30 – 15:45 Tea Break
- 15:45 – 17:00 Team Building – Role Plays & Team Building Activities
Q&A Session

Day 10 **Thursday, December 03, 2009**

Session on Decision Making by Ms. Gunjan Arora, Consultant, NPTI

- 10:00 – 11:30 Decision Making – Styles & Methods
- 11:30 – 11:45 Tea Break
- 11:45 – 13:00 Steps for Better Decision Making, Quick Decisions
- 13:00 – 14:00 Lunch

Session on Inter-Personal Skills by Ms. Indu Maheshwari, Deputy Director, NPTI

- 14:00 – 15:30 Inter-Personal Skills – Attitude, Positive Attitude, Assertive Behaviour
- 15:30 – 15:45 Tea Break
- 15:45 – 17:00 Attitudinal Re-Orientatation
Q&A Session

Day 11 Friday, December 04, 2009

Session on Stress Management by Ms. Shikha Kapoor, Consultant, NPTI

10:00 – 11:30 Positive & Negative Stress ,Stress & Health Management, Cost of Mismanaged Stress

11:30 – 11:45 Tea Break

11:45 – 13:00 Worry & Fear, Anger Management

13:00 – 14:00 Lunch

Demonstration on 500 MW fossil fuel Simulator & Demonstration on 430 MW Combined Cycle Gas Turbine (CCGT) Simulator

14:00 – 15:30 Exposure to 500 MW Control Room Operation Simulator and Cold Start up to Synchronisation Operations & Loading

15:30 – 15:45 Tea Break

15:45 – 17:00 Exposure to 430 MW CCGT Simulator
Open Cycle Operation

Day 12 Saturday, December 05, 2009

10:00 – 16:00 Visit to 220 KV Distribution Sub-Station, Palla, Faridabad

WEEK III December 7 - December 12, 2009

Day 13 Monday, December 07, 2009

Session on Customer Relationship Management by Mr. A. K. Sinha, Consultant, NPTI

- 10:00 – 11:30 Customer Relationship Management
- 11:30 – 11:45 Tea Break
- 11:45 – 13:00 Grievance Redressal Mechanisms in Distribution Utility
- 13:00 – 14:00 Lunch

Session on Customer Relationship Management by Mr. Sanjay Jadhav, Senior Consultant, NPTI

- 14:00 – 15:30 Customer Relationship Management – Case Studies
- 15:30 – 15:45 Tea Break
- 15:45 – 17:00 Customer Relationship Management – Case Studies

Day 14 Tuesday, December 08, 2009

Session on Instructional Techniques for Trainers by Dr. Shalini Sharma, Professor of Economics, Sharda University & Ms. Farida Khan, Senior Consultant, NPTI

- 10:00 – 11:30 Teaching Skills for Trainers
- 11:30 – 11:45 Tea Break
- 11:45 – 13:00 Preparation for Practice Session
- 13:00 – 14:00 Lunch

Session on Instructional Techniques for Trainers by Dr. Shalini Sharma, Professor of Economics, Sharda University & Ms. Farida Khan, Senior Consultant, NPTI

- 14:00 – 15:30 Delivery of Sessions by Participants in Group of Three Each/Video Processions
- 15:30 – 15:45 Tea Break
- 15:45 – 17:00 Replay of Video Sessions and Discussions

Day 15 Wednesday, December 09, 2009

Session on Electrical Cables and Accessories by Mr. V. Sasikumar, Head Product Management, Tyco Electronics Ltd.

10:00 – 11:45	Case Study Manufacturing Process of Cables
11:45 – 12:00	Tea Break
12:00 – 13:00	Designing of Cables
13:00 – 14:00	Lunch
14:00 – 14:45	Quality Tests
14:45 – 15:45	Quality checks on Cables
15:45 – 16:00	Tea Break
16:00 – 17:00	Cable Laying & Installation
17:00 – 18:00	Cable Accessories

Day 16 Thursday, December 10, 2009

Session on Distribution Transformers by Mr. Mukesh Swarup, V. P. Operations, Kotsons Pvt. Ltd.

10:00 – 11:00	Transformer Specifications
11:00 – 11:15	Tea Break
11:15 – 12:15	Manufacturing Processes/ Erection
12:15 – 13:15	Quality Control
13:15 – 14:15	Lunch
14:15 – 15:15	Commissioning
15:15 – 16:15	Testing
16:15 – 16:30	Tea Break
16:30 – 16:45	Maintenance
16:45 – 17:45	Preventive Actions

Day 17 Friday, December 11, 2009

Session on Meter Module by Mr. Madhur Shrivastava, Senior Manager (Business Development), Secure Meters

- | | |
|---------------|---------------------------------------|
| 10:00 – 11:00 | Metering Applications |
| 11:00 – 11:15 | Tea Break |
| 11:15 – 12:15 | Types of Meters |
| 12:15 – 13:15 | Installation Aspects |
| 13:15 – 14:15 | Lunch |
| 14:15 – 15:15 | Metering field testing Requirements |
| 15:15 – 16:15 | Various growing Metering technologies |
| 16:15 – 16:30 | Tea Break |
| 16:30 – 17:30 | Concepts on Prepayment metering |

Day 18 Saturday, December 12, 2009

- | | |
|---------------|-------------------------|
| 10:00 – 13:00 | Visit to CRM Cell, NPCL |
|---------------|-------------------------|

WEEK IV December 14 - December 18, 2009

Day 19 Monday, December 14, 2009

Session on Surge Arresters by Mr. P. J. Karnik, Deputy General Manager, Ravin Cables

- 10:00 – 11:00 Surge Arresters and Recent developments
- 11:00 – 11:15 Tea Break
- 11:15 – 12:15 Causes of Over voltages/ Surges in a system
- 12:15 – 13:15 Various types of Surge Arresters
- 13:15 – 14:15 Lunch
- 14:15 – 15:15 Major components
- 15:15 – 16:15 Manufacturing of Surge Arresters
- 16:15 – 16:30 Tea Break
- 16:30 – 17:30 Tests on Surge Arresters

Day 20 Tuesday , December 15 , 2009

Session on Switchgear and Control Gear by Mr. Sachin Rana, Associate Manager, Schneider Electric

- 10:00 – 11:00 Overview on Switchgear & Controlgear Concept/products
- 11:00 – 11:15 Tea Break
- 11:15 – 12:15 Basic definitions of Switchgear & Control gear products
- 12:15 – 13:15 Basic functions of Switchgear & Control gear products
- 13:15 – 14:15 Lunch
- 14:15 – 15:15 Types of faults
- 15:15 – 16:15 Operations of Circuit Breakers
- 16:15 – 16:30 Tea Break
- 16:30 – 17:30 Fault clearing processes

Day 21 Wednesday, December 16, 2009

Session on Instrument Transformer by Mr. Vrajesh Desai, Manager and Head Technical Training, ABB Ltd.

10:00 – 11:00	Condition based maintenance of Instrument transformers
11:00 – 11:15	Tea Break
11:15 – 12:15	Failure and factors responsible for failures
12:15 – 13:15	Degradation process of Insulation
13:15 – 14:15	Lunch
14:15 – 15:15	Moisture transition and its effects on Insulation
15:15 – 16:15	Diagnostic Tests
16:15 – 16:30	Tea Break
16:30 – 17:30	Maintenance aspects

Day 22 Thursday, December 17 , 2009

Session on Capacitors by Mr. Saravanan Jeganathan, Manager Marketing, ABB Ltd.

10:00 – 11:00	Capacitor fundamentals/Benefits
11:00 – 11:15	Tea Break
11:15 – 12:15	Concept on Power factor correction/vector fundamentals
12:15 – 13:15	Types of Compensation/ Harmonics
13:15 – 14:15	Lunch
14:15 – 15:15	Capacitor design/Construction
15:15 – 16:15	Capacitors Maintenance/Selection criteria/Installation/Commissioning
16:15 – 16:30	Tea Break
16:30 – 17:30	Introduction to Reactive Power Management/Testing

Day 23 Friday, December 18 , 2009

Session on Insulators by Mr. Debashish Chakraborty, Aditya Birla Insulators

10:00 – 11:00	Types of Insulators/Manufacturing
11:00 – 11:15	Tea Break
11:15 – 12:15	Insulators Testing / selection & Handling
12:15 – 13:15	Installation/Troubleshooting
13:15 – 14:15	Lunch
14:15 – 16:00	Open
16:00 – 16:05	Welcome Address by Mr J. S. S. Rao, Director, National Power Training Institute (NPTI)
16:05 – 16:10	Opening Remarks by Dr. N. S. Saxena, Director General, National Power Training Institute (NPTI)
16:10 – 16:15	Appreciation Address by Nominated Participant from the Afghanistan Team
16:15 – 16:20	Vote of Thanks by Mr. Michael Hajny, Chief of Party, PA Consulting Group
16:20 – 16:30	Certificate Distribution
16:30 – 16:45	Tea Break