

Training Programme on

GAS INSULATED AND INDOOR SUB-STATIONS

24th - 27th October, 2018



आर ई सी
REC

असीमित ऊर्जा, अनन्त संभावनाएं
Endless energy. Infinite possibilities.

आरईसी इंस्टीट्यूट ऑफ पावर मैनेजमेंट & ट्रेनिंग
REC INSTITUTE OF POWER MANAGEMENT & TRAINING
(Formerly known as Central Institute for Rural Electrification)

INTRODUCTION

Substations form an important part in evacuation, transmission and distribution of electrical power. Substations 'step' or 'convert' power voltage up or down so that electricity can be delivered from transmission lines to customer.

In the fast growing and densely populated cities, there is a need for more substations as the use of power increases, but adequate space is the main constraint for building up conventional substations, which requires more space as it uses air for insulation between live parts and ground. But, Gas insulated Substation (GIS) are different from Air Insulated Sub-stations (AIS), as the substation equipment are placed inside the modules filled with SF₆ gas. SF₆ gas having high dielectric property acts as insulating medium between live parts and ground and generally are indoor type and requires less space.

Gas insulated indoor substations have several advantages over conventional substations especially in congested city areas, less sensitivity to pollution as well as salt, sand or even large amounts of snow and less operation & maintenance costs, besides highly reliable. Overall size of each equipment and the complete substation is reduced to about 20% of the conventional air insulated substation. The initial capital investment is more in GIS as compared to AIS, but due to less maintenance cost over the years and land cost, the difference in the capital cost is very less between GIS and AIS.

For urban supply networks, the combination of HV gas-insulated substations and HV cable has important advantages over systems with air-insulated substations and overhead lines. Due to their compactness and flexibility, GIS substations can be located close to load centers, allowing a much more efficient configuration for both the HV system and the MV distribution network. Further, because of modular design, construction requires lesser time. A cheaper alternative to GIS is the metal clad indoor sub-station, it is also not subject to atmospheric vagaries and pollution.

Considering all the above, RECIPMT proposes a 4 day training programme on “**Gas Insulated and Indoor Sub-stations**” from **24th to 27th October 2018** at its campus, for the working executives in the areas.

PROGRAMME OBJECTIVES

- Acquaint the participants with the necessity for going in for gas insulated and indoor substations
- Familiarize with the salient features of Indoor and Gas insulated substations and its Life cycle cost analysis
- Impart knowledge on laying, jointing and termination of Under Ground Power Cables and Control Cables

PROGRAMME CONTENTS

The programme will cover the following broad areas:

- Salient features of Gas Insulated and indoor Substations
- Gas Insulated and indoor Substations - Necessity and advantages over conventional Substations and the Life Cycle Cost Analysis
- Operation & Maintenance aspects of Indoor and Gas Insulated Substations
- Earthing Arrangements in Indoor and Gas Insulated Substations
- Laying, jointing, termination and fault location techniques of Underground Power Cables and Control Cables

- Code of practice of wiring in substations for effective operation and maintenance and fault diagnosis.
- Field Visit to Gas Insulated / indoor Substation.

PEDAGOGY

The programme will be conducted in an interactive environment providing greater scope for discussions. Eminent Engineers, professionals, consultants and experts from different organizations shall be involved as resource persons on different topics of their specialization. The pedagogy includes lectures, discussions, exercises, case studies, etc.

TARGET GROUPS

Junior/Middle level Engineers, heads of divisions/functions in the areas of Planning, Construction, Project Implementation, Operations & Maintenance areas from Public and Private Sector Power Utilities, Regulatory Commissions and Electricity/Power Departments will benefit from the programme.

PROGRAMME DATE, TIMINGS & VENUE

24th to 27th October, 2018 from **9.45 am to 5.15 pm** with break for lunch, tea and refreshment. The venue will be RECIPMT Campus, Aramgarh X Road, NPA Post, Hyderabad-500 052.

PROGRAMME FEE

Category	Course Fee per participant	GST (18%)	Total Course Fee/Participant without Group Discount	Group Discount of 10% for 3 or more Participation from same utility ***
Residential*	₹ 22,000	₹ 3,960	₹ 25,960	10%
Non Residential**	₹ 18,000	₹ 3,240	₹ 21,240	10%

* Includes Boarding and Accommodation in addition to tuition, courseware & other facilities, Field Visit, etc.

** Excludes Accommodation, Includes only Working Lunch, Class room Tea & Snacks.

*** Only on Participation basis

The Accommodation is provided on Double Occupancy Basis

Note: No Pick-up or Drop facility will be provided and participants have to make their own arrangements to reach RECIPMT Campus.

Course Fee shall be paid in the form of a demand draft/cheque in favor of “**REC Institute of Power Management & Training**” payable at Hyderabad in advance or at least at the time of registration. The course fee may also be paid by NEFT/RTGS transfer to **HDFC Bank Account No: 00210350000930, IFSC Code: HDFC0000021**. GSTIN of RECIPMT: **36AAACR4512R3Z0**.

HOW TO REGISTER

Please send the nominations on or before **20th October, 2018** along with DD/ Cheque / NEFT transfer to: **The Additional Director, REC Institute of Power Management & Training**, NPA Post, Shivarampally, Hyderabad-500052. Fax: 040-29805896, E-mail: recipmt@gmail.com. Please contact Dr. R. Mohd. Nafi, in his Mobile 09441296670 for further information. Participants are advised to commence their journey, after receiving the confirmation from RECIPMT.

CERTIFICATE OF PARTICIPATION

On the completion of the programme, participants will receive a Certificate of Participation

ABOUT REC

Since its inception in 1969, Rural Electrification Corporation (REC), a Navaratna PSU, has been playing a significant role in financing and promoting electrification projects across India. Within a span of 45 years, REC has emerged as India's leading finance company in power sector. Be it generation, transmission, distribution or renewable energy, REC has always created benchmarks in its every performance. Based on the MOU with Ministry of Power, the performance of REC is rated as "Excellent" consistently for the last 24 years.

ABOUT RECIPMT

REC Institute of Power Management & Training (RECIPMT) earlier known as Central Institute for Rural Electrification was established at Hyderabad in 1979 under the aegis of Rural Electrification Corporation Limited to cater to the training and development needs of Engineers and Managers of Power and Energy Sector. RECIPMT is relentlessly engaged in capacity building to strengthen the human resources development initiatives of Power Sector. RECIPMT has been conferred with Education Leadership Award by reputed Business School and ABP News National Educational Award for 3 years in recognition of Leadership, Development, Innovation and Industry interface.

The Institute is spread over an area of about 14 acres, with administrative, teaching and hostel blocks. Class rooms and hostel rooms are air-conditioned. An Energy Park has been set up to develop awareness on Renewable Energy Sources System and High Voltage Distribution System.

Upto March 2018, the Institute has organized 1972 training programmes and 43352 Engineers/ Managers from various Power Utilities, like Generation, Transmission & Distribution Companies, Electricity Departments, Rural Electric Cooperatives, Regulatory Commissions, Rural Development Agencies, Banks, CPUs, etc., participated in the programmes. The Institute has organized 87 International Training Programmes under ITEC/SCAAP of Ministry of External Affairs, GOI and trained 1389 executives from 86 countries.



Programme Coordinators:

Shri P. Laxminarayana

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