

**Job oriented Program**  
**POST GRADUATE DIPLOMA COURSE**  
**IN**  
**“TRANSMISSION & DISTRIBUTION SYSTEMS”**  
(26 Weeks)

**XXIX BATCH (April, 2020)**

**PROSPECTUS**



**NATIONAL POWER TRAINING INSTITUTE**

**(Ministry of Power, Govt. of India)**

(An ISO 9001:2015 & ISO 14001:2015 Organization)

**Power Systems Training Institute**

Subramanyapura Road, Near Yarab Nagar Bus Stop,

Banashankari II Stage, Bangalore- 560 070

(KARNATAKA) INDIA

TELEFAX: 080-26713758  
TEL: 080-26934351/52

E-mail: [pstinpti@yahoo.com](mailto:pstinpti@yahoo.com)

Website: [www.nptibangalore.in](http://www.nptibangalore.in)  
[www.npti.gov.in/npti\\_psti\\_bangalore](http://www.npti.gov.in/npti_psti_bangalore)



**NATIONAL POWER TRAINING INSTITUTE**  
**Power Systems Training Institute**  
**(An ISO 9000:2015 & ISO 14001:2015 Organization)**  
**Ministry of Power, Govt. of India**  
**BANGALORE-560 070**



**Announces XXX Batch of**

**26 WEEKS POST GRADUATE DIPLOMA COURSE IN  
TRANSMISSION & DISTRIBUTION SYSTEMS**

**WHY YOU SHOULD JOIN?**

The Indian Power Sector is changing substantially in its institutional arrangements for its regulation as well as the structure. Apart from technological, and perception changes, major changes have been introduced in the Power Sector through private participation, reforms, and restructuring. It has further created a large demand for the trained persons in Electrical Utilities.

This is a job oriented **Graduate Engineer Program** for those who desire to make a career in the power sector. On successfully undergoing this course the Graduate Engineers will find immense opportunities of employment in Indian Power Sector.

**ABOUT THE COURSE**

The course content complies with the syllabus for Engineers and Supervisors for Operation & Maintenance of Transmission & Distribution Systems as per Safety and Electric Supply Regulations 7(3) of Govt. of India.

The instruction and training methodology comprises 60% theory and 40% practical Sessions. The main objective of the course is to create a technically and professionally trained manpower available for the Power Industry.

**PLACEMENT**

Many of our previous batch trainees are employed with reputed Organizations like Adani Transmission, Sterlite Grid, Bajaj Electricals, Essar Power, Arcadis, Atkins Global, Khatib and Alami, Toshiba Transmission and Distribution, Teems India Towerlines Pvt. Ltd., Open Systems International JVS Electronics, National Contracting Company, KEC, Kalpataru Power Transmission Company, Kalkitech, Suzlon, Genus Power & Infrastructure Company, Manav Energy Pvt Ltd, Oblum Electric, Vijay Electricals, Schweitzer Engineering Lab Pvt. Ltd., Manikaran Power Etc.

**IMPORTANT DATES (Revised)**

Issue of Prospectus	<b>4<sup>th</sup> Feb., 2020</b>
Last Date for receipt of application forms in all respects	<b>09.04.2020</b>
Display of merit list in website	<b>09.04.2020 5:00PM</b>
Counseling & Admission	<b>15<sup>th</sup>, 16<sup>th</sup> &amp; 17<sup>th</sup> April, 2020</b>
Commencement of the Course	<b>20.04.2020</b>

**IMPORTANT POINTS**

- ✓ **ELIGIBILITY:** Bachelor of Engineering or equivalent in "Electrical" or "Electrical & Electronics" or "Power Engineering".
- ✓ **AGE LIMIT:** No age limit.
- ✓ **SELECTION CRITERIA FOR ADMISSION:** Percentage of marks obtained in the B.E. or equivalent examination as per University norms.
- ✓ **NO. OF SEATS:** 60 (Sixty only). 25% seats are reserved for sponsored category. Reservation for SC, ST, OBC & PH will be as per Govt. norms in the non-sponsored category.
- ✓ **FEES:**
  - Rs. 1,45,000/- + 18% GST
  - Rs. 27,000/- Hostel room charges for residential candidates (2-Seater) and canteen charges will be as per actual.
 Education Loans are provided by Nationalised Banks to eligible candidates (Terms and conditions apply). Course Fee can be paid in two instalments.
- ✓ **SPONSORED CANDIDATES:** The candidates sponsored by the companies, if fulfilling eligibility requirement, will be admitted directly
- ✓ **HOW TO APPLY**  
Download the Application form from our website and send it as directed in the application along with a crossed DD of Rs 500/- in favour of **"PSTI, Bangalore"**

**ADDRESS FOR CORRESPONDENCE**

Head of Institute  
**National Power Training Institute (PSTI),**  
 Subramanyapura Road, Banashankari-II Stage,  
 Near Yarrab Nagar Bus Stop,  
 Bangalore-560 070  
 Fax: 080-26713758  
**Tel. 080-26713758, 26934351/52**  
 Email : [pstinpti@yahoo.com](mailto:pstinpti@yahoo.com);  
[nptipsti.training@gmail.com](mailto:nptipsti.training@gmail.com)  
 Website : [www.nptibangalore.in](http://www.nptibangalore.in)

## **ABOUT NPTI, BANGALORE**

Power Systems Training Institute, Bangalore, established in the year 1972 (formerly functioning under CEA) has been brought under the National Power Training Institute (NPTI); the National Apex Body for Training Power Sector Personnel in the country w.e.f. 1<sup>st</sup> April 2002. During the last 45 years, the Institute has trained many power sector personnel in the area of Transmission & Distribution of Power, who are manning various important positions in Power Sector of the Country. It has a self-contained complex with hostel and Institute with all infrastructural and instructional facilities. The PSTI, Bangalore is equipped with the laboratories for Power System Studies, Power System Simulation, Relay Testing and High Voltage Testing. The Hot Line Training Center, also a unit of NPTI in Bangalore, imparts live line maintenance training of High Voltage transmission lines up to 400KV. The Institutes have experienced Faculty members, Trainers, Laboratories, etc.

## **WHY YOU SHOULD JOIN?**

Power Sector is a continuously expanding sector of Indian infrastructure contributing significantly to the GDP. The Indian Electricity Act, 2003 has opened private sector participation in the Transmission & Distribution of Power creating a large demand for the trained persons in Electrical Utilities.

The main objective of the course is to create technically sound and trained manpower readily available for recruitment to the power utilities dealing with Transmission & Distribution of Electrical Power.

This is a job oriented **Graduate Engineer Program** for those who desire to make a career in the power sector. On successful completion of this course, the Graduate Engineers will get their knowledge and skills sharpened, paving the way for better employment opportunity in various power companies.

## **ABOUT THE COURSE:**

The course content complies with the syllabus for Engineers and Supervisors for Operation & Maintenance of Transmission & Distribution Systems as per Safety and Electrical Supply Regulations 7(3) of Govt. of India.

## **PLACEMENT:**

NPTI maintains close linkage with companies. Placement assistant will be provided by the Institute. The previous trainees got placement in Sterlite Grid, Bajaj Electricals, Wind World India Ltd., Toshiba Transmission and Distribution, JVS Electronics, National Contracting Company, Atkins Global, Easun Reyrolle Ltd, KEC (International & Domestic), Kalpataru Power Transmission Co. (International & Domestic), Adani Power, Kalkitech, Suzlon, Genus Power & Infrastructure Company, Manav Energy Pvt Ltd, Oblum Electric, Teems India Towerlines Pvt. Ltd., Open Systems International, Arcadis, Schweitzer Engineering Lab Pvt. Ltd., Manikaran Power Etc.

However, the placement depends on the response from the Industry and performance of the trainees.

## **ELIGIBILITY:**

Bachelor of Engineering or equivalent in **“Electrical”** or **“Electrical & Electronics”** or **“Power” Engineering**

## **AGE LIMIT :**

No age limit.

## SELECTION CRITERIA FOR ADMISSION:

Percentage of marks obtained in the B.E. or equivalent examination as per University norms. **In case of universities awarding Grade Points (CGPA or equivalent), the same should be converted into percentage and the conversion formula obtained from University/College should be attached.**

## NO. OF SEATS:

60 (Sixty) Reservation for SC, ST, OBC & PH will be as per Govt. norms in the non-sponsored category.

## FEES: (Non-sponsored Category)

Residential/ Non-Residential	Course Fee	GST on course fee @ 18%	Lodging Charges (Optional) 2-Seater	Cautions Money (Refundable)	Total including GST	Placement Fee (including tax) To be paid if the trainee get placement through Campus Recruitment	1st Instalment	2nd Installment
Residential	1,45,000	26,100	27,000	15,000	2,13,100	15000*	1,30,500	82,600
Non-residential	1,45,000	26,100	0	15,000	1,86,100	15000*	1,03,500	82,600

\*Not to be paid during admission

## Fees : (Sponsored Category)

Residential/ Non-Residential	Course Fee	GST on course fee @ 18%	Lodging Charges (Optional)	Cautions Money (Refundable)	Total
Residential	1,90,000	34,200	27,000	15,000	2,57,200
Non-Residential	1,90,000	34,200	0	15,000	2,39,200

## SPONSORED CANDIDATES:

The candidates sponsored by Power Utilities/Corporations/Companies and fulfilling the eligibility requirement will be admitted directly.

## HOW TO APPLY:

Application form along-with prospectus can be obtained from the Institute by paying cash or at the following address by post sending A4 size self addressed envelope along with a Crossed Demand Draft for Rs. 500/- **in favour of "PSTI, Bangalore"**.

**OR**

Download the Application form from our website and send it as directed in the application along with a crossed DD of Rs 500/- in favour of **"PSTI, Bangalore"**.

The application form complete in all respects along with the attested copies of documents listed in the application form are to be sent or submitted in person to the address mentioned below. NPTI shall not be responsible for any postal delay or loss of mail.

### Address for Correspondence

Head of Institute

**National Power Training Institute (PSTI),**

Subramanyapura Road, Banashankari-II Stage, Near Yarrab Nagar Bus Stop, Bangalore-560 070

Fax: 080-26713758, **Tel. 080-26713758, 26934351/52,**

Email: **pstinpti@yahoo.com; nptipsti.training@gmail.com**

Website **www.nptibangalore.in**

## IMPORTANT DATES

Issue of Prospectus	4 <sup>th</sup> Feb., 2020
Last Date for receipt of application forms in all respects	09.04.2020
Display of merit list in website <a href="http://www.nptibangalore.in">www.nptibangalore.in</a>	09.04.2020 5:00PM
Counseling & Admission	15 <sup>th</sup> , 16 <sup>th</sup> & 17 <sup>th</sup> April, 2020
Commencement of the Course	20.04.2020

## BOARDING & LODGING

1. The total lodging charges of Rs. 27,000/- for six months are to be paid in advance at the time of admission by the residential participants.

## GENERAL

1. **Security Deposit:** An amount of Rs. 15,000/- as Caution Money (Refundable) against use of Library, Hostel, Stores, etc. is to be deposited by the student at the time of joining the Institute.
2. **Hostel:** No outsiders – known or relatives – shall be permitted to use hostel facilities for whole or part of the day.
3. **REFUND POLICY :**
  - A) **Refund on Discontinuation of the course:** In case a selected candidate discontinues from the program for any reason, no part of course fees and lodging charges will be refunded. The boarding charges excluding taxes and the security deposit become refundable at the time of discontinuation after the dues.
  - B) **Refund on Completion of Course:** Only the Security Deposit will be refunded after deduction of dues, if any.
4. **Late Fee:** If a candidate fails to deposit any installment of course fee by the due date, late fee @ Rs. 100/- per week will be chargeable from the due date.
5. The right of admission will rest with NPTI. Candidates found irregular in attending training or uninterested shall not be considered for placement and/or their course certification will be reviewed.
6. **Mode of Payment:**

Payments must be in the form of e-transfer / DD only in favour of Power Systems Training Institute payable at Bangalore. Name of the trainee & course shall be written on the backside of the DD. The bank transaction ID and date shall be sent by mail to [pstinpti@yahoo.com](mailto:pstinpti@yahoo.com)/[pstinpti.training@gmail.com](mailto:pstinpti.training@gmail.com) in case of e-transfers

### **Bank Details in case of e-transfer:**

- Name of the Beneficiary : Power Systems Training Institute, Bangalore
- Name of the Bank & Branch : State Bank of India, Banashankari II Stage Branch
- Address of the Branch : 9<sup>th</sup> Main Road, Banashankari-II Stage, Bangalore - 70
- NEFT IFSC Code : SBIN0006767
- Account Type : Current
- Account No. : 10031210203
- MICR No. : 560002008
- RTGS IFSC Code : SBIN0006767
- GSTIN: : 29AACAN2698A4ZG
- Pan No.: : AACAN2698A
- Tan No: : BLRP00338C
- SAC (Service Accounting Code) : Commercial Training 999293

Note: NPTI (PSTI) is a non-profit making educational institute. It does not come within the purview of I.T.Act for deduction of tax at source vide 10(23C) (iii ab) of I.T Act 1961. Hence no tax deductions at source shall be done against PSTI payments. TAN No: BLR P00338C; PAN No: AACAN2698A

### **HOW TO REACH THE INSTITUTE:**

The Institute is about 10 KMs south of Bangalore City Railway Station/Bangalore City Bus Stand and 45 KMs from Bangalore International Air Port from where Pre-paid taxi / Auto-rickshaw services are available. City buses also ply via Yarab Nagar bus stop (bus route Nos. 15C, 15E, 15H, 210A, 210R and 210E from Bangalore City Bus Station).

## SYLLABUS FOR PGDC in T&D Systems

### 1. GENERAL INTRODUCTION

**Power Generation** : Thermal, Hydro, Nuclear and Gas ,Renewable Energy Sources Generation, Transmission & Distribution Scenario of India.

**Types of generation**: Conventional and Renewable, Thermal Power Plant, Hydro Power Plant, Gas Power Plant, Nuclear Power Plant, Co-generation.

### 2. Power Transmission Line Engineering

EHV Transmission system in India, Tower types, Conductors, Earth wire, Insulators, Statutory clearances, Surveying, Route Alignment, Tower erection, Tower Testing, Stringing, Transmission Line Commissioning, Maintenance of transmission line, Thermo vision scanning, Hot line maintenance.

### 3. EHV Substation Planning & Engineering

Substation Planning, Site selection, Layout of substation & Civil works, Selection of main equipment, Selection of switchgear, Electrical clearances, Instrument transformers-selection & Performance, Control & Instrumentation in Substations, Substation auxiliaries, Substation grounding practices, Demo on grounding.

### 4. Power System Studies

Power System Modelling, Load flow studies, Tutorial on load flow studies, Study state fault analysis, Tutorial on Fault Analysis, Transient stability studies, Relay Co-ordination studies, Tutorials, EMTP Studies.

### 5. High Voltage Testing of Power System Equipment

Philosophy of HV Testing, Generation and Measurement of HVs, Testing of Power Transformers, Testing of Insulators, Testing of Surge Arrestors, Testing of Switchgear, Testing of Transformer oil, Dissolved Gas Analysis, Partial Discharges.

### 6. Power System Protection

Overview of Power System Protection, CTs and PTs, Generator Protection, Transformer Protection, Transmission Line Protection – distance schemes, Transmission line protection – unit schemes, Bus Bar Protection, Motor Protection, Over voltages in Power Systems, Protection against over voltages, Insulation Co-ordination

### 7. Operation and Maintenance of EHV Substation Equipment

Transformers-Construction, Connections, Tap Changing Mechanism & Parallel Operation, Testing and Protection of transformers, O&M of Transformers, Selection, Sizing, performance Analysis of HV Circuit Breakers, Transformer Neutral Earthing, O&M of HV Circuit Breakers, Operation and Maintenance of Distribution Transformers, Operation and Maintenance of Distribution Switchgear.

### 8. HVDC Transmission Systems

Introduction to HVDC Transmission, Principles of HVDC Conversion, HVDC Lines, HVDC Sub Stations, Reactive Power Management in HVDC Stations, AC & DC harmonics and filtering, HVDC System operation, control and maintenance, HVDC Protection, Insulation Co-ordination, Emergencies and case studies

### 9. Distribution System Engineering

Distribution systems overview, Planning, Design and selection of pole structures conductors insulators etc., Pole erection, conductors stringing, Layout of earth wire, neutral wire guarding, jointing of conductors, jumpering etc.; Location, construction and erection of pole mounted sub stations; Selection, fixing of switches, fuses etc.; Operation & Maintenance of Distribution Lines.

## **10. O & M of Distribution Substations and Distribution Metering**

Distribution Substation - types, layouts, bus bar arrangements; Selection of Distribution sub station equipment, Distribution sub station relay schemes, O&M of Relay schemes, Substation Operation overview, Code of practice in Sub Station Operations, Work permits, line clear procedure, Maintenance of log books, Records etc., Distribution Substation Operation - Case studies; Types, design and construction of distribution meters, Failure analysis of Distribution Meters.

## **11. Power Cables and Jointing Techniques**

Power Cable - Design, Construction, Testing, Operation & Maintenance; Trouble shooting of Power Cables; LT and HT Cable jointing, Termination and Accessories; Cable fault detection and repair; Demo on LT & HT Power cable jointing - End joint & Straight through joint.

## **12. Communication in Power Systems**

Communication systems: PLCC, Microwave, Leased lines, OPF, Satellite, Power Line Carrier Communication, Optical fibre communication, Satellite communication, Planning and selection of communication systems, Trends in communication, Telemetry, Tele control and Tele protection

## **13. Power system Operation - Active and Reactive Power Despatch, SCADA, AGC & ED**

Functions of Load Despatch Centres, Supervisor control & Data requisition, Load forecasting, generation scheduling, load management & load shedding, Energy management system functions, Voltage and frequency control, Grid Disturbances-Case Studies, State estimation, Security and contingency analysis, Voltage and frequency control, Automatic Generation Control and economic dispatch, Application of SCADA in power systems, Application of EMS in power systems.

## **14. Power Market Regulations**

Introduction to commercial aspects of transmission and distribution, Tariff structure, types, method of working out, revenue realization, Regional energy accounting, Inter-utility tariff, commercial disputes and solutions. Availability based tariff and open access. TTC, ATC, Reliability Margin, Tariff Regulations, Open Access, RES Integration, Point of Connection Charges, Congestion Charge Regulations, Regional Energy account, Power exchanges

## **15. Electrical Safety and Statutory Regulations**

Safety Requirement, Hazards, Electrical Accidents and prevention, First Aid, Fire fighting-Types of fire, fire fighting/system, fire extinguishers

## **16. Labs:** Dispatcher Training Simulator, Relay Testing, Power System Studies, HV Testing, Instrumentation, Switchgear Labs

## **17. Technical Visits:** Sub-stations, Transmission Lines, Power Plants, Manufacturing units, Testing Centres, etc.



SRLNO:

**APPLICATION FORM**  
**Post Graduate Diploma Course in**  
**TRANSMISSION & DISTRIBUTION SYSTEMS- Batch XXX**  
**SESSION-April, 2020**

For Official Use only

Name: _____
DD/Cash: _____
Sl.No.: _____

Paste Passport  
sized  
photograph

1. Full Name of the candidate (In Capital Letters) : \_\_\_\_\_

2. Father's Name : \_\_\_\_\_

3. Date of Birth (in Christian Era)  
(as given in 10<sup>th</sup>/SSLC/SSC)

Date		Month		Year			

4. Sex (mark  $\checkmark$ )

Male	Female
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5. Marital Status (mark  $\checkmark$ )

Single	Married
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6. Nationality

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7. Category (mark  $\checkmark$ )

SC	ST	OBC	PH	GEN	SPONSORED
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8. Address for communication

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PIN CODE						
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Telephone No. \_\_\_\_\_

E-mail ID: \_\_\_\_\_

9. Permanent address

(if different from above)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PIN CODE						
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10. Educational Qualifications (Starting from highest qualification)

Sl. No.	Examination passed	Branch/ Subject	Year of passing	College/ University	Percentage of marks/class (as per University norms)
1.					
2.					
3.					
4.					

Self Attested photocopy of qualifying degree, mark sheet and proof of date of birth are to be sent along with application form.

11. Experience after Graduation (if any)

Sl. No.	Designation	Name of organization	Period of Employment		Nature of duties
			From	To	
1.					
2.					

12. Are you a Sponsored Candidate?

Yes	No
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If Yes, please furnish the certificate given below:

**Certificate of Sponsorship (In Company's Letter Head)**

This is to certify that Mr./Ms. \_\_\_\_\_, working in this concern/organization from \_\_\_\_\_ as \_\_\_\_\_, will be sponsored by us in case he/she is selected for admission to the 26 weeks PGDC in "Transmission & Distribution Systems" for the session of March, 2017.

Signature of Employer

Name

Designation

Address

Place:

Seal:

13. Proof of Identity (attach copy)

(Employer ID/Passport/Driving License/PAN Number, etc)

14. Any other information:

(Offer of job in hand, continuing education, bond/liability/commitments etc.)

**15. List of Documents to be attached with the application:**

- a) Application fee of Rs. 500/- in the form of a crossed DD in favour of PSTI, Bangalore (In case the application is downloaded from website)
- b) One Passport size photo
- c) Self Attested photocopy of qualifying degree and age
- d) Self Attested photocopy of Mark sheet of the qualifying degree & conversion formula obtained from university in case of Grade Points.
- e) Sponsorship Certificate, Experience Certificate, Salary Slips/Bank Statement (if applicable)
- f) Community Certificate (if applicable)

**DECLARATION**

The above furnished information are true to the best of my knowledge and belief. In case of anything found misleading or wrong or incomplete I agree that my candidature is liable to be rejected without any notice.

Signed on this \_\_\_\_\_ (day) of \_\_\_\_\_ (month) \_\_\_\_\_ (year)

Place: \_\_\_\_\_ Signature of Candidate \_\_\_\_\_

Date: \_\_\_\_\_ Name (in full) \_\_\_\_\_

**Note: Application complete in all respects along with the self attested copies of the documents indicated must reach:**

**The Head of Institute,  
National Power Training Institute,  
Power System Training Institute,  
Near Yarabnagar Bus stop,  
Banashankari II stage,  
Bangalore 560 070**

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**FOR OFFICE USE ONLY**

**Enrolment No:**

**Application Fee for Rs. 500/- DD No.**

**Date**

**Bank**

**Branch Code**

**Type of Candidature**

Sponsored

Non-Sponsored

**Certificate Proof attached:**

**Age**

Yes

No

**Qualification**

Yes

No

**SC/ST/OBC**

Yes

No

NA

**Sponsorship**

Yes

No

NA