Post Graduate Diploma Course

in

Thermal Power Plant Engineering

Program Brochure
1. POST GRADUATE DIPLOMA IN THERMAL POWER PLANT ENGINEERING

➢ ABOUT THE COURSE

The Indian power Sector is presently passing through a phase of transition of technology up-gradation in the area of Generation and Transmission of Power. Several new Ultra Mega Thermal Power Projects are in the process of installation both in Public and private sectors where advanced technology like Super Critical Technology supported by the latest technology of Electrical, Control & Instrumentation systems etc are coming in a big way. The course contents of this one year training programme have been designed to fulfill the mandatory requirements of Indian Electricity Rules amended in 1981 to groom the students having the basic theoretical knowledge of Power Generation from their college with the latest technology of Operation & Maintenance of the Thermal power plants. After completion of the course, the Engineers would be eligible for operation & Maintenance of Power plants of Capacity 100 MW and above as the course is in line with the syllabus recognized by Central Electricity Authority (CEA).

The duration of the course would be 52 weeks having 2 semesters comprising class room sessions as well as on-the-job training. The students have to attend the on-job practice sessions in power plants, substations etc. Visit to some reputed manufacturing plants is also an integral part of the course. At the end of the course, 2 weeks Simulator training will be arranged in the Simulator having latest state of the art technology. To enhance the personal skills, some inputs of management are also to be given to the students.

➢ WHY YOU SHOULD JOIN CBIP FOR THIS COURSE?

India is growing at faster pace with a GDP of around 9% for the last 5 years. To sustain this GDP it is necessary to have the growth of its power sector even at a higher rate. Indian Power industry, being highly capital intensive industry, is growing at a very fast rate of about 10% per annum. The present installed capacity of Indian power industry is about 1,75,000 MW. To keep pace with the GDP growth of our country Govt. of India has a mandate of adding about 75,000MW to 100,000MW during the 12th (2012-2017) Five Year Plan and about same capacity during 13th Plan (2017-2022). Human resource development and capacity building in the present power scenario demands a very comprehensive and pragmatic approach to attract, utilize, develop, and conserve valuable human resources. Training, re-training, and career prospects are some of the important elements of human resource development. By the working group on manpower planning in power sector it has been estimated that there is a shortage of skilled manpower which is fast emerging as a serious obstacle to the Govt. efforts to expedite the pace of power generation capacity addition in the country. Technically trained manpower comprising skilled engineers, supervisors, artisans/technicians and managers is required in every sphere of the power supply industry. The capacity addition along with commensurate Transmission and Distribution infrastructure leads to an estimated requirement of about 7.4 Lakh additional personnel for construction and O&M during 12th plan itself. Category wise break-up of manpower during 12th plan is given in the following table:-

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Category</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Engineers</td>
<td>68,000</td>
</tr>
<tr>
<td>2.</td>
<td>Supervisors</td>
<td>1,27,000</td>
</tr>
<tr>
<td>3.</td>
<td>Skilled Workers</td>
<td>1,02,000</td>
</tr>
<tr>
<td>4.</td>
<td>Semi-skilled Workers</td>
<td>1,10,000</td>
</tr>
<tr>
<td>5.</td>
<td>Unskilled Workers</td>
<td>1,27,000</td>
</tr>
<tr>
<td>6.</td>
<td>Non-tech</td>
<td>2,05,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>7,40,000</strong></td>
</tr>
</tbody>
</table>
In order to mitigate the shortage of trained manpower Govt. of India has already taken many initiatives for providing training and developing the required manpower but the requirement of trained manpower is so high that there is a need of training/retraining of fresh and in service engineers and groom them by providing them the required training inputs and make them readily available for deploying them in the Power Sector as per its manpower requirements.

Hence, there is an ample scope of making a carrier in the Power Sector for the Engineers who undertake this programme.

In view of this CBIP has taken initiative and launched this 52 weeks **Post Graduate Diploma Course in Thermal Power Plant Engineering** as training in Power Sector is niche area of CBIP:

- The objective of the course is to develop groomed manpower for the power sector having high skills and confidence in running a Power Plant. After completion of the course the students would be readily available for the Indian Power Sector for taking over the charge of Operation & Maintenance of Power Plant equipments.
- The course satisfies the mandatory requirements of Rule 3 of Indian Electricity (Amendment) Rules, 1981 and recognized by CEA.

The course will be conducted under the supervision of experienced faculty who were the main initiators of this program in Indian Power Sector. Sh. C.S. Malik, Director, CBIP formerly Principal Director, NPTI and Sh. S.K. Ghosh, Adviser, CBIP, formerly Director, NPTI would be supervising this course.

### 2. STRENGTHS OF CBIP

- An 84 years old establishment into dissemination of knowledge in Power, Irrigation and Renewable sectors
- Almost all reputed utilities of Power, Irrigation and Renewable sectors of the country are the institutional members and at least 2600 senior officers of the level of Chief engineer and above from these sectors are the members
- Has a great networking and close relations with all reputed utilities of these sectors. Institute is located in most posh and central place of the capital city of the country i.e. Chanakyapuri, New Delhi
- Easy availability and access to the reputed and highly experienced faculty because of above two facts
- Has a strong base of the very senior officers with deep experience of various disciplines of Power and irrigation sector
- Has state of the art infrastructure facilities like Digitized library, dining hall, classrooms, conference hall etc. well equipped with audio visual aids and Air conditioning system
- Publishes very strong technical publications on very thrust areas in above sectors
- Has the secretariat of at least 10 international organizations and the Secretary CBIP is the secretary or the member secretary of their India chapters.
- A very strong Board with Chairperson, CEA as the President; Chairman Power Grid as the Vice President (Power); Member, CWC as the vice President.
- CBIP is also in the process of setting up of its Power Management Institute at new plots allotted by HUDA in Gurgaon for conducting long term/short term training programs in all the three niche sectors i.e. Power, Water Resources and Renewable Energy.
- CBIP has also signed a Memorandum of Understanding (MoU) with Indian Electrical and Electronics Manufacturers Association (IEEMA) which has a network of around 650 member organizations from public, joint & private sectors including good no. of organizations associated with Transmission &
Distribution systems for collaborative ventures/efforts for enhancement of quality service through various activities viz., joint assignments, training programs, conferences, seminars, consultancy, R&D activities, joint studies and surveys, knowledge sharing and action plans identified by CBIP and/or IEEMA.

- The “Excellence Enhancement Centre for India power Sector” has been established under the aegis of CEA at CBIP, Malcha Marg.
- Most of the organizations (Govt. sector & Private) of Indian Power sector involved in Generation, Transmission and Distribution of Power are the members of CBIP.
- CBIP has a strong team of senior training officers, having in-depth knowledge of conducting various long term training programs related to Power sector and were among the team of main initiators for launching the Post Graduate Diploma Course and Post Diploma Certificate programs in Thermal/T&D/GIS and B-Tech(Power) in the country.

3. DETAILED CURRICULUM OF THE COURSE:

➢ COURSE OBJECTIVES

After completion of the course the students will acquire extensive basic and advanced knowledge of:

- Operation & Maintenance of Thermal power plant equipment and its process.
- Necessary safety aspects required in a power plant
- Details of plant equipment
- Power plant project management.
- Process flow,
- Mechanical/Electrical/Instrumentation aspects of power plants,
- power plant schemes

A. Methodology for the Course

- Classroom Lecture Sessions
- Power Plant Visits
- Scheme Tracing in Thermal Power Plant
- On-Job Operation & Maintenance Training at Thermal Power Plant
- Group Discussion session
- Projects, Seminars Submissions

4. COURSE PROFILE

DETAILD CURRICULUM (SEMESTERWISE)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Subject/Modules-First Semester</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Power Plant Introduction and Industrial Safety</td>
<td>1 week</td>
</tr>
<tr>
<td>02</td>
<td>Power Plant Familiarization</td>
<td>6 weeks</td>
</tr>
<tr>
<td>03</td>
<td>Power Plant Briefing and Scheme Tracing</td>
<td>2 weeks</td>
</tr>
<tr>
<td>04</td>
<td>Power Plant Operation</td>
<td>3 weeks</td>
</tr>
<tr>
<td>05</td>
<td>Rotational On-Job (Operation)</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Sl.No.</td>
<td>Subject/Modules-Second Semester</td>
<td>Duration</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>06</td>
<td>Erection, Commissioning &amp; Construction Management</td>
<td>2 weeks</td>
</tr>
<tr>
<td>07</td>
<td>Power Plant Performance &amp; Efficiency Calculations</td>
<td>1 week</td>
</tr>
<tr>
<td>08</td>
<td>Power Plant Chemistry, Metallurgy, NDT &amp; Welding</td>
<td>1 week</td>
</tr>
<tr>
<td>09</td>
<td>Gas Turbine &amp; Combined Cycle Power Plant</td>
<td>½ week</td>
</tr>
<tr>
<td>10</td>
<td>Advanced Steam Generation Technologies</td>
<td>½ week</td>
</tr>
<tr>
<td>11</td>
<td>Management &amp; Personality Development</td>
<td>1 week</td>
</tr>
<tr>
<td>12</td>
<td>Mid-term Appraisal</td>
<td>2 weeks</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Sl.No.</th>
<th>Subject/Modules-Second Semester</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Power Plant Protection &amp; Load Despatch</td>
<td>1 week</td>
</tr>
<tr>
<td>14</td>
<td>Energy Audit</td>
<td>1 week</td>
</tr>
<tr>
<td>15</td>
<td>Maintenance Management</td>
<td>1 week</td>
</tr>
<tr>
<td>16</td>
<td>Renewable &amp; Hydro Power Plants</td>
<td>1 week</td>
</tr>
<tr>
<td>17</td>
<td>Maintenance Practices</td>
<td>4 weeks</td>
</tr>
<tr>
<td>18</td>
<td>Design Aspects of Power Plant equipment</td>
<td>½ week</td>
</tr>
<tr>
<td>19</td>
<td>Power Reforms, Regulations and Tariff</td>
<td>1 week</td>
</tr>
<tr>
<td>20</td>
<td>Control &amp; Instrumentation</td>
<td>2 weeks</td>
</tr>
<tr>
<td>21</td>
<td>IT Application in Power Sector &amp; GIS</td>
<td>½ week</td>
</tr>
<tr>
<td>22</td>
<td>Environment Management</td>
<td>1 week</td>
</tr>
<tr>
<td>23</td>
<td>Rotational On-Job (Maint)</td>
<td>6 weeks</td>
</tr>
<tr>
<td>24</td>
<td>Training &amp; Visit to Manufacturing Works</td>
<td>2 weeks</td>
</tr>
<tr>
<td>25</td>
<td>Simulator</td>
<td>2 weeks</td>
</tr>
<tr>
<td>26</td>
<td>Project</td>
<td>2 weeks</td>
</tr>
<tr>
<td>27</td>
<td>Final Appraisal</td>
<td>2 weeks</td>
</tr>
</tbody>
</table>

*Simulator training for 2-weeks will be imparted in a latest technology based Simulator of the country.

5. COURSE CERTIFICATION

Certificate will be issued by Central Board of irrigation & Power (CBIP) which is a reputed autonomous body in the field of Power & Water Resources having liaison with various Govt./Semi-Govt./Pioneer-Pvt. Sector Organizations including Central Electricity Authority, NTPC, NHPC, Powergrid etc.

6. PLACEMENT SERVICES

While looking at the aforesaid strengths of CBIP, which has a strong network with good chunk of power utilities of the country, by virtue of the institutional memberships, individual memberships of the very Senior Officers of Indian Power Sectors and the strength/support of other Govt. organizations, CBIP shall be putting in best of its efforts for arranging for the placements of the candidates in various power utilities of the country.
7. INFORMATION TO THE CANDIDATES

A. WHO CAN APPLY

- The candidates who have obtained B.E./B.Sc. (Engg.), A.M.I.E. or equivalent degree in Mechanical / Electrical / Electronics & Communication / Control & Instrumentation / Power Engineering are eligible to apply for admission to this Post Graduate diploma Course. Those appearing in their final year examination may also apply. However, they must submit their result at the time of counseling.

- Graduate Engineers sponsored by State Electricity Boards/Power Utilities and Private Companies with at least one year post qualification experience as on 26.09.2011 and minimum 60% marks in BE/B-Tech./equivalent degree.

B. COURSE FEES/PAYMENT OF FEE

For non-sponsored candidates: Rs.1,30,000/- (to be paid in 3 installments; 1st installment – Rs.50,000/- at the time of counseling, 2nd Instalment – Rs.40,000/- latest by 30th December, 2011, 3rd Installment – 40,000/- latest by 15th March, 2012)

For sponsored candidates: Rs. 1,50,000/- (to be paid in full at the time of counseling) Course fee includes the Simulator Training fee.

Travelling/lodging cost in case of outstation visits is to be borne by the students.

For foreign nationals: US$ 6,000/- (to be paid in full at the time of counseling)

The course fee may be paid in the form of demand draft drawn in favour of “CBIP, New Delhi”. The payment may also be done through online system of banks (ECS/RTGS/NEFT). The details of the bank of CBIP where remittance is to made through online banking is given below:

(i) Name of the Bank: ICICI Bank Ltd.
(ii) Brand Address: 16/48, Malcha Marg, Shopping Center, Chanakyapuri, New Delhi-110021.
(iii) Branch Code: ICIC0000346
(iv) MICR: 110229052
(v) S/B A/c Number: 034601000738

In this case the candidates may supply the following information to CBIP through email/fax/letter:

(i) Name of the student
(ii) Amount Paid
(iii) Name of the Bank/Branch
(iv) Transaction ID/ UTR (Unique Transaction Reference) Number

C. SELECTION CRITERIA FOR ADMISSION

Admission will be given based on the percentage of Marks obtained in 10th, 12th & B.E. or equivalent examination. The weight-age would be given for 10th, 12th & B-Tech/BE/ Equivalent Engineering degree in the ratio of 10%, 20%, 70% respectively. Admission shall be subject to verification of documents. A candidate who is allotted a seat during counseling will be required to pay the 1st installment of fee (Rs. 50,000/- for non sponsored candidate and Rs. 1,50,000/- for sponsored candidate) immediately without which the admission will not be confirmed.
D. TOTAL SEATS

Total No. of seats for the program is 60 (may vary). 25% of the seats are reserved for candidates sponsored from Power utilities having more than one year experience and more than 60% marks in Engineering Degree.

The seats of sponsored category can be filled by non-sponsored category and vice-versa depending on the position of vacant seats.

E. AGE LIMIT

For the non sponsored candidates maximum age limit as on 26.09.2011 is 27 years. However, there is no age limit for the sponsored candidates.

F. COUNSELING

Counseling will be held at CBIP, Malcha Marg, Chanakyapuri, New Delhi, opposite to Carmel Convent, Malcha Marg between 10AM to 5-30PM. The candidates must appear in person on the date of counseling with all relevant original documents like Birth certificate, Educational qualifications, CGPA/CPI conversion chart issued by the registrar/controller of examinations of the concerned university (in case of CGPA/CPI candidates) etc.

G. SPONSORED CANDIDATES

The Candidates who are sponsored from any organization have to enclose a sponsorship certificate issued by their respective organizations in the format given on the CBIP website.

8. HOW TO APPLY

Application as per the format available on CBIP website on plain paper along-with the demand draft of Rs. 500/- in favour of CBIP payable at New Delhi, should reach the Secretary, CBIP, (address given below) latest by 09/09/2011 with Two passport size photographs.

Candidates are advised to go through the brochure thoroughly before filling the form

Points to be Noted:

(i) All the future notifications/ information will be available on CBIP website. The candidates are advised to be regularly in touch with the website.

(ii) Attach attested copies of proof of Date of birth, certificates / mark sheets of 10th / 12th / Engg. Graduation/CGPA/CPI Conversion Chart issued by Registrar/controller of the concerned university.

(iii) Application fee is non refundable.

(iv) Applications after due date will not be accepted.

(v) Candidates are advised to book their tickets in advance for the counseling dates to avoid any last moment inconvenience.

9. ADDRESS FOR COMMUNICATION

Secretary, CBIP, Malcha Marg, Chanakyapuri, New Delhi-110021
Tel No: 011-26875017/26116567/24102437/ Fax: 011-26116347
E-mail: cbip@cbip.org / ghoshsk@cbip.org / jaideep@cbip.org
10. HOSTEL ACCOMMODATION/TRANSPORT/WORKING LUNCH DURING THE SESSIONS

To facilitate the candidates in having a good accommodation, CBIP has tied up with local guest house nearby having good lodging and boarding facilities and the same is being provided by CBIP at a reasonable (subsidized cost). Thus, the total charges which the candidates have to bear are below:

- Lodging and boarding at guest house = Rs.9000/- (which may vary a little).
- Transport cost for transport facility from guest house to institute and back = Rs.1100/- per candidate per month.
- Cost of lunch and two times tea/biscuits etc = Rs.1750/- per candidate per month (for 5 working days in a week).
- Payment towards lodging/boarding/travelling etc is to be made in advance at the time of counseling as per details given below.
  - Three months advance for lodging/boarding in the guest house, travelling, working lunch tea etc during the sessions = Rs.35550/-

11. SECURITY DEPOSIT

An amount of Rs. 5000/- as security deposit which is refundable has to be deposited by the student at the time of admission.

12. REFUND

Fee once deposited will not be refunded. In case a selected candidate wishes to withdraw from the course for any reason, no part of course fee will be refunded except the security deposit.

13. OTHER EXPENSES

The candidates have to bear charges against uniforms, safety shoes, safety helmets, bus facility. The exact amount to be paid will be displayed along with the selection list after short-listing of the candidates for the course. Travelling/lodging cost in case of outstation visits is to be borne by the students.

14. IMPORTANT DATES

- Last Date for receipt of completed application forms: 09/09/2011
- Announcement of 1st list of candidates for counseling on website: 10/09/2011
- Dates for first counseling: 16 to 17/09/2011
- Dates for second counseling (in case of any vacant seat): 20/09/2011
- Commencement of Course: 26/09/2011