



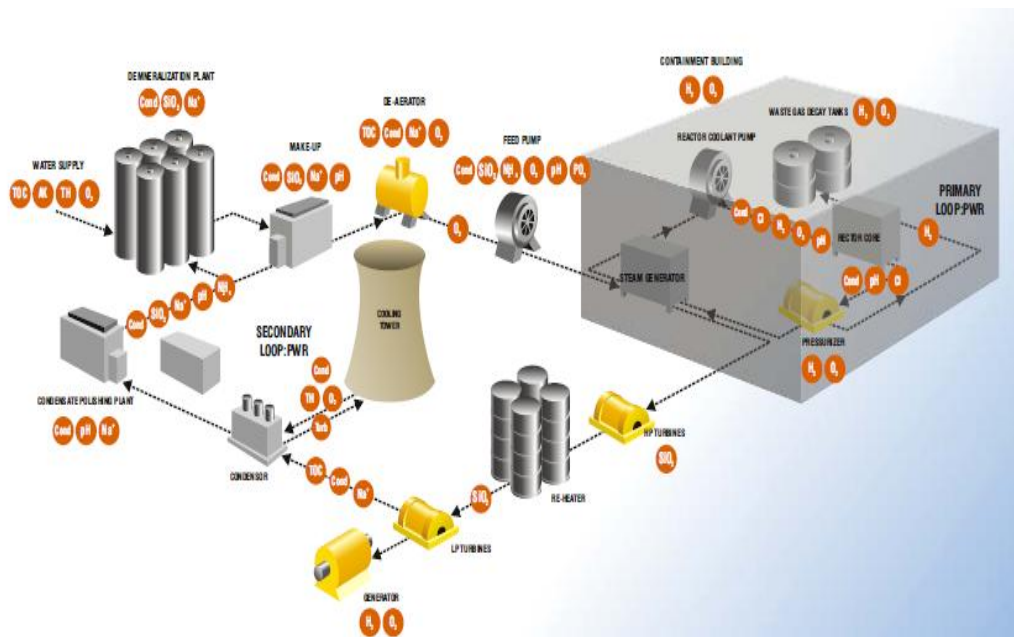
Engineering Staff College of India

Autonomous Organ of The Institution of Engineers (India)
Old Bombay Road, Gachi Bowli, Hyderabad – 500 032. TS, India



POWER & ENERGY DIVISION

Continuing Professional Development Programme on **Super Critical and Sub-Critical Boilers : Water Chemistry Issues and Challenges** 19 - 21 November 2019



(An ISO 9001:2015 Certified, AICTE & CEA Recognized Institution)

Centre for Promotion of Professional Excellence

INTRODUCTION

Energy security constitutes the backbone of country's all-round development, and fossil fuels continue to play a major role in total power generation in India. Environmental pollution is one of the most serious issues the world is facing today, and power generation through fossil fuels contributes its gigantic share to the pollution. In order to save the planet-Earth from the galloping pollution effects, one of the solutions to reduce pollution from power sector, is to increase the efficiency of power generation through Supercritical and Ultra-supercritical boiler technology. In India, Subcritical boilers only have been in use for long time, and presently about 80% of fossil electric power is generated by Subcritical boilers while only 20% of fossil powers coming from the new Supercritical technology. Govt. of India stipulates that all the new coal-based power stations are mandatorily required to have Supercritical boilers which give higher efficiencies with lower specific fuel consumption and hence reduced pollution. Supercritical system starts at steam pressure of 221 bar & temperature more than 374⁰C. However, supercritical boilers operate at steam pressures more than 275 bars and temperatures of 600⁰ C and more, which will offer station efficiencies around 43-45%.

Water chemistry plays a critical role in smooth functioning of thermal power plant. While the chemistry parameters to be maintained are well prescribed, control and maintenance of the water chemistry parameters without interruptions remains a challenge. Water chemistry requirements are much more stringent for Supercritical boilers since they operate at much higher temperatures and pressures and without blow-down as compared to subcritical boilers. So, supercritical boilers will have a total condensate polishing unit as an additional treatment unit to avoid impurity build-up in boiler water system. Corrosion, Erosion, Scaling and Fouling and the associated break-downs which have direct bearing on the plant availability, are the major issues in the heat exchange equipment namely boiler, turbine, condenser, deaerator, and feed water heaters etc...This program takes the participants through the basics of Supercritical and Subcritical boilers, their differences, boiler water chemistry requirements and treatment schemes, cooling water chemistry and treatment etc.

OBJECTIVE

The objective of the program is to sensitize the participants with fundamentals of Supercritical and Subcritical boilers and their differences, advantages and limitations of Supercritical and Ultra-Supercritical boilers, water chemistry issues like corrosion, scaling, fouling and associated challenges

COURSE COVERAGE

- Current power scenario and role of Supercritical boilers in India
- Basics of Supercritical and Subcritical boilers and their differences
- Advantages and limitations of Supercritical and Ultra-supercritical boilers
- DM water production and best practices of O & M of DM water Plants
- Monitoring of chemistry parameters
- Corrosion, Erosion, Scaling and Fouling mechanisms and their effects on power plant performance
- Boiler water chemistry requirements and treatment schemes
- Cooling water chemistry and treatment methods
- Case studies

METHODOLOGY

The programme will be conducted in an interactive environment providing greater scope for discussions. Emphasis will be on a highly participative style of learning. The faculty will act as provocateurs and resource persons and demonstrate application oriented studies rather than as teachers. The participants are expected to play a very active role not only as learners and facilitators but also as experts and practitioners in their own right.

FACULTY

Apart from Core Internal Faculty, Consulting Firms, Government Organisations, Academic and Research Institutions etc. will share the sessions.

TARGET PARTICIPANTS

Power Engineers in O&M, Commissioning & Construction / Executives / Station Chemists working in Thermal Power Plants / CPPS / IPPS / Power Utilities / Corporations, State Govt. / SEB's, Nodal Agencies, Energy Planners, Research / Academic Institution / College Faculties / Lab In-charges etc.

PROGRAMME VENUE, DATES & TIMINGS

Engineering Staff College of India (ESCI) Campus, Old Bombay Road, Gachi Bowli, Hyderabad - 500032, Telangana, India.

DATES

19 - 21 November 2019

TIMINGS

On the first day registration will commence at 0900 Hrs. On all other days the programme timings will be from 0945 to 1715 hrs with breaks in between for tea and lunch.

ACCOMMODATION

Participants will be accommodated in our Executive Hostel located within ESCI Campus. The accommodation will be on twin sharing basis.

COURSE DIRECTOR

A Chandra Mohana Rao

Sr. Faculty & Head - Power & Energy Division, ESCI

COURSE FEE

Residential Fee is Rs.15,000/- (Residential) per participant. Residential fee includes Course Material, Course Kit, and Twin-sharing / Single AC accommodation as per availability, Breakfast, Lunch, Dinner, Tea / Coffee and Snacks.

DISCOUNTS

Non-Residential Fee: 10% discount on course fee is allowed for non-residential participants.

Group Discount: 10% discount for three or more participants if sponsored by the same organization.

(All discounts are applicable only if fee is received at ESCI a week before the commencement of the programme)

GST @18% (as applicable) is to be paid extra over and above the training fee. ESCI's **Provisional ID No. 36AAATT3439Q1ZV, PAN Card No. AAATT3439Q.**

The course fee is to be paid in favour of **“IE (I) – ENGINEERING STAFF COLLEGE OF INDIA”** in the form of demand draft payable at Hyderabad.

Alternatively the payment may be made by **Electronic Fund Transfer (EFT) to ESCI – SB A/c No. 33705165550** with The SBI, Manikonda Branch, Gachi Bowli, Hyderabad – 500 032 by **NEFT / RTGS / IFSC Code No: SBIN0011076 – MICR No: 500002107.** While using EFT method of payment, please ensure to communicate us your company name, ESCI invoice reference and programme title.

Online registration is available on ESCI website. To register, manually please send your nominations **(10 days prior to date of commencement of the programme)** giving details of name, designation, contact address, email address, mobile number, telephone and fax number of the participant along with the details of mode of payment of fee, addressed to:

Head, Power & Energy Division

Engineering Staff College of India

Gachi Bowli, Hyderabad – 500 032

Phone: 040 – 6630 4170 to 4177; 040-6630 4100, Fax: 040 – 23000336, 66304103

Email:pe.esci@gmail.com / pe@escihyd.org; Website: www.escihyd.org

CERTIFICATE: A certificate of participation will be awarded to each participant on conclusion of the programme.

GENERAL INSTRUCTIONS

- ESCI encourages participants to present case studies from their respective organizations.
- For the convenience of the outstation participants ESCI will facilitate pickup and drop from Airport / Railway Station / Bus Stations, if travel plans are received at least 3 days in advance along with mobile number by fax or email. The charges shall be paid by the participants directly to the cab driver.
- ESCI provides complimentary accommodation to participants a day prior to the commencement and after the conclusion of the programme. (Check in at 12:00 hrs a day prior to the commencement & check out at 12:00 hrs a day after completion of the programme).
- Overstay charges of @ Rs.990/- per day / per head including hospitality (Bed Tea / Coffee to Dinner) will be charged.
- Well developed Information Centre and Internet facilities are available to the participants free of cost.