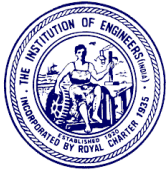




Engineering Staff College of India

Autonomous Organ of The Institution of Engineers (India)

Old Bombay Road, Gachi Bowli, Hyderabad – 500 032. TS, India



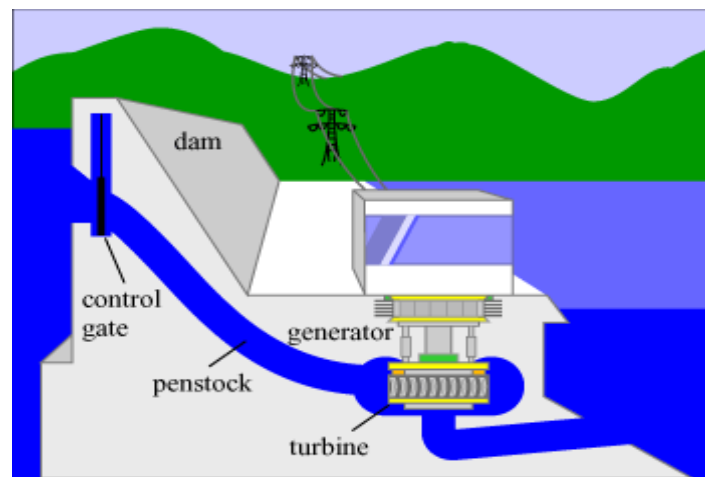
POWER & ENERGY DIVISION

Classroom Continuing Professional Development Programme on

Best Practices in O&M of Hydro Power Plants

21 - 24 January, 2025

at ESCI, Hyderabad



(An IMS Certified (ISO 9001:2015 QMS, ISO 14000:2015 Env'tl. Mgmt., ISO 45001:2018 (OH&SM), ISO 50001:2018 EnM), AICTE & CEA Recognized Institution)

Centre for Promotion of Professional Excellence

INTRODUCTION

In India, by 31st May 2023, the Installed capacity of Hydro Power Plants stood at 46850 MW. The thrust given to other renewable energy like wind and solar, has resulted in other RE installed capacity of 125692 MW, surpassing the hydro capacity. But considering the low cost of generation, hydro power is one of the preferred green power in terms of economy and prevention of climate change. Given the increasing renewable energy integration into the grid, hydropower is set to play a major role in addressing the intermittency and grid balancing requirements.

Apart from building new hydro power stations, we need to preserve the life of the existing power stations through best practices in operation and maintenance and also improve the reliability of supply. Not only do hydropower plant repairs take a great deal of time, but due to lost output and unscheduled maintenance, the costs can quickly spiral out of control too. So the best solution is to keep a close eye on all aspects of your operation – including the internal workings of your machinery. Now, this may sound like a time-consuming and potentially impossible task, but that's not the case. With the latest condition monitoring technology, sensors combined with software and data analytics are able to track, measure, and report on the performance of all aspects of your machinery. Different and complementary measurement techniques are available for the monitoring of key parameters of hydropower plant machinery including vibrations, partial discharge, air gap, magnetic field, temperature, etc. The operation of hydro stations is at present mostly automatic and unattended. This mode of operation of power stations is becoming more popular. With the advent of automation, it is possible to regulate the loads and ultimately increase the efficiency of the units.

On maintenance side, developments in the methodology in assessment of cavitation, the improved methods of runner repairs in-situ, condition monitoring of the turbine, generator stator and rotor insulation, modern diagnostic and expert systems for monitoring of various parameters, the improved methodologies for dynamic balancing and the revolutionary changes in the metallurgy have ultimately contributed for improving the reliability of the machines and increasing the generation.

Considering the above, Engineering Staff College of India (ESCI) thought it fit to conduct a program on “Best Practices in O&M of Hydro Power Stations” to expose the participants to the latest developments in these vital areas:

OBJECTIVE

The objective of the program is to familiarize the participants with best practices in operation and maintenance of hydro stations for optimum output with the highest degree of reliability.

COURSE COVERAGE

- Reliability of Hydro Power Stations through Scientific Maintenance
- Condition Monitoring of Hydro Power Station's Main and Auxiliary Equipment
- Phenomena of Cavitation and Cavitation Damages – Rectification – Performance Monitoring
- Runner Repairs and other Hydraulic Components – Metallurgical Aspects
- Generator windings – Insulation Checks, Repairs & Improvements
- Modern Diagnostic Systems and Expert Systems
- Station Automation

- Alignment of Vertical Hydro Machines
- Digital Excitation Systems and AVR's
- Dynamic Balancing
- Non-Destructive Techniques – Applications for Condition Assessment.
- Cooling Water System, Drainage System and Fire Fighting Systems
- Silt Problem
- Special Maintenance on Hydraulic Structures like Gates, Hoists, Valves, etc.
- Improvements and Best Practices
- 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 classrooms are provided with latest audio – visual teaching aids. The ambience in the campus and classrooms facilitate in effective learning by participants.

FACULTY

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

TARGET PARTICIPANTS

Engineers and Managers from Hydro Power Utilities, Independent Power Producers (Hydro), Contractors Associated with Operation and Maintenance of Hydro Power Stations.

PROGRAMME VENUE, DATES & TIMINGS

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

DATES

21 – 24 January, 2025

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

Dr. V. Vidyasagar

Sr. Faculty - Power & Energy Division, ESCI

(Mob: 9421801203)

COURSE FEE

Residential Fee is Rs.22,000/- 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 **GST 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 – Current 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 4176 ; 040-6630 4173 / 4176, 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 INFORMATION

- 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 (Food will be charged extra).
- Well developed Information Centre and Internet facilities are available to the participants free of cost.