RESERVOIR AND APPURTENANT STRUCTURES DISCIPLINE AT CWPRS, PUNE

Central Water and Power Research Station (CWPRS), Pune is a premier national institute offering a wide range of R&D services related to water and energy resources development, river engineering problems and the coastal development projects. As the UN recognized Regional Laboratory for ESCAP region, CWPRS has offered its services to neighbouring countries in Asia, Middle East and Africa. Reservoir and Appurtenant Structures is one of the major disciplines of research at CWPRS.

Under this discipline, studies are carried out for evolving efficient, economical and safe hydraulic designs of structures such as spillways, energy dissipators and water conductor systems involving power intakes, high head gates, diversion tunnels, sluices and outlets, surge tanks, tunnels, and tailrace tunnels/channels. The studies are carried out with the help of hydraulic models, mathematical models and analysis of prototype data in the following areas of specialization:

- **Spillways and energy dissipators**
  Studies include discharging capacity assessment, pressures and water surface profiles, performance of energy dissipators and plunge pool design.
- **Diversion tunnels, Power intakes and tailrace system**
  Layout, location and dimensions of diversion tunnel, intake and water conductor system, submergence from the consideration of vortex, transient analysis for water hammer effect and water levels in surge tank.
- **Vertical, Radial and Stoplog gates**
  Layout of gates and location of airvents, optimization of hydrodynamic uplift and downpull forces, hydrodynamic pressures and air demand.
- **Canal Automation**
  Canal automation is application of automatic devices or logic to assist in controlled coordination among various canal regulating structures. It may involve wide array of technologies, ranging from simple mechanical devices to complex completely computerized controls.

Power Intake, Punatsangchhu II, Bhutan

Service gate installation at IBPT model, Sardar Sarovar , Gujarat

Tailrace Channel, Omkareshwar Project, M.P.

Information Bulletin

Two days Training course

on

Hydraulic Modelling of Major Components of Hydropower Schemes
9-10 March, 2017
PUNE – INDIA

Organized by

Central Water and Power Research Station,
Khadakwasla, Pune - 411024

Dr. Mukesh Kumar Sinha
Director

Objectives

Multipurpose river valley projects backed by big dams and water conductor systems have played a vital role in ensuring self-sufficiency in food production, flood control, rapid industrialization and electrification. The construction of dams involves huge capital cost and recurring expenditure for maintenance. The dam hydraulics should be optimized functionally and economically before the execution of construction work. The most reliable method of investigation of flow through river sluices, power intakes and through the water conductor systems and other outlet is by performing experiments on scaled models. The approach flow conditions near intake to avoid air-entraining vortices, design of river sluices and diversion tunnels, assessment of hydrodynamic forces on control gates, design of tailrace channel etc. are normally investigated by physical models. Whereas hydraulic transient analysis for water conductor system is generally conducted by mathematical modelling.

The present training course is being organized to discuss on various modelling techniques used for hydraulic design of power intakes, water conductor systems, gates, diversion tunnels, Hydro turbines, tailrace tunnels / channels etc. The course will provide a platform for site engineers, researchers and academicians to review the existing practices, assess the future challenges and work on strategies for newly emerging modeling techniques for adopting a hydraulically efficient and techno-economically feasible hydraulic design.

Course Content

The training course will provide the state of the art information through series of lectures by CWPRS experts about techniques used in hydraulic modelling of Power intakes, Control gates, diversion tunnels, tail race channels / tunnels and water conductor systems including Hydro turbines and hydraulic transient analysis for hydro-power followed by demonstrations of physical models. Several important case studies will also be discussed during the course. A visit to various laboratories and important models at CWPRS will also be organised.

Venue and Date

The training course will be held between 0930 and 1700 hours on 9th and 10th March 2017 at CWPRS, Pune.

Participation

The proposed course is designed for professionals/ practicing and design engineers, post graduate students, academicians and researchers.

Registration

The registration fee for this course is Rs. 4000/- only. (Concessional fees for student participants is Rs. 2000/-.) The Demand Draft towards registration fees may be drawn in the name of Pay & Account Officer, CW&PRS, payable at Pune.

Accommodation

Limited accommodation, at nominal cost, is available at CWPRS Guest House for the participants to the Training Programme on a 'first-come-first-served' basis. Nominations of intended participants, along with the registration form, may be sent to the course coordinator latest by 20th February 2017.

Coordinator

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Training Course
on

Hydraulic Modelling of Major Components of Hydropower Schemes

at

CWPRS, Pune-411024
9-10 March, 2017

REGISTRATION FORM

Name:_____

Designation:_____

Organisation:_____

Mailing Address: _____

_____

Tel: Off. _____Res._____

Fax: _____

e-mail: _____

Please find enclosed DD No._____

dated_____for Rs._____ drawn

on_____towards registration

fees.

Signature