

EDITORIAL

India is bestowed with rich water resources but more than 80% of the rainfall over the country falls in the four monsoon months from June to September. Because of high temporal and spatial variability of rainfall, a number of dams have been constructed all over the country to tap the available water resources so that this water can be utilised in accordance with the requirements of our population.

For the efficient use of these water resources; not only construction of dams but proper management of the reservoirs is also very necessary. Reservoir operation therefore, rightly forms a very important part in the planning and management of water resources system. Reservoir operation without a proper regulation schedule entails considerable risk as the objectives of the project may not be fully met, apart from the danger to the structure itself. After a dam has been constructed, detailed guidelines in the form of reservoir operation policy have to be available to the operator for enabling him to take decisions about storing or releasing water. Also, due care has to be taken regarding risk of flooding in downstream reaches.

Water resources systems are generally complex, comprising of multiple and multipurpose reservoirs. Conflicting objectives like irrigation, flood control, hydropower production and environmental preservation are inevitable while deriving the operating alternatives in an efficient way for any complex water resources system. Various optimization methods and models have been developed for planning and operation of reservoirs.

Increasing population, urbanisation and industrialisation have increased not only the demand for water supply but also the damage potential arising from floods. For the better management of existing reservoirs, real-time operation is employed involving the operation of reservoirs concurrently with a computer system including use of meteorological forecasts such that the results of the computation are available well in time to usefully influence or control the operation.

This issue of "Jalvigyan Sameeksha" is devoted to the theme of "Reservoir Operation" and invited papers have been contributed by the authors covering various aspects. It is hoped that the views expressed in these papers would be found to be useful and would also lead to better planning and operation of reservoirs.

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