

PREFACE

Water and land resources, mineral, fossil-fuel and forest wealth are the nature's bounties available to humanity. Happiness or misery and survival or extinction of mankind is entirely dependent on the use, disuse or misuse of these resources. All these resources are bound to become scarce sooner or later owing to galloping demands of the ever increasing population of the world.

India is bestowed with abundant water resources. Unfortunately, due to uneven regional, seasonal, spatial and temporal distribution of our monsoonic precipitation, the availability of water is extremely uncertain. Frequently, water is not available where it is needed, when it is needed and of the required quality. India has 1/3rd of its territory drought prone and 1/8th of its territory liable to flooding. Approximately 80% of the riverflows goes to the sea unutilized while the population reels under the unending cycles of floods and droughts. A number of environmental problems have come to notice which have come for considerable criticism from various quarters.

In view of the above, the main objective of water resources development is to smoothen the unevenness and utilize the available resources in the most optimal way. Among the various components of a water resources development project, reservoirs are the most important. The purpose of a reservoir is to equalize the natural streamflow and to change the temporal and spatial availability of water. India has more than 3000 major and medium dams which are being operated to utilize the immense water resources for the benefit of the population. With this background, *Reservoir Operation* has been identified as a thrust area for demand driven research under the **Hydrology Project**.

However, a prime requisite of the research in hydrology is the availability of an extensive database of hydro-meteorological data for a region. In fact, one of the main objectives of the hydrology project, which has been recently launched in 8 states of India, is to create a network of well-instrumented observing stations and create regional hydrological data banks. One of the major objectives of this project is to set up regional data bases. The project also envisages research in key demand driven areas.

The Institute is working on the various aspects of the reservoir operation problem through the work program of its Water Resources Systems Division. The division has completed several sponsored research projects and has prepared a number of technical reports.

I am sure that the present training course will be beneficial to the participating field engineers and they will be able to utilize the knowledge gained in their real-life problems.


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