Abstract

Water, one of the five natural resources, is considered to be an everlasting gift to our planet. Rain and Snow are the natural sources of water. It tranquilizers thirst, produces energy, fills the soil with a life force that makes plants and trees grow, reducing pollution.

Like every good thing in the world, too much water or too little of it, gives rise to disaster. An incessant downpour of rain can cause catastrophic deluges to wash away or drown living or non-living objects. On the other hand, no or low rains cause deadly famine.

Dams are built by man, stores water; controls flood, and generate energy. Canal network distributes this natural resource for drinking, agriculture and for industrial use, at distant locations, thus covering large areas.

Water, though a natural resource has now become a commodity. Water used for drinking and industrial purposes is charged on volumetric basis. Water Users Associations (WUA) in the State of Maharashtra, are also charged on volumetric basis for Agricultural use as well. All other states in India are following the same pattern. Unless the reliability of water distribution is achieved, all other efforts to boost agricultural and industrial output will not yield the desired results.

Canal network includes main, branch, distributaries, sub-distributaries, and minors. Measurement of leveland discharge in open canal is quite complex making it difficult to implement. It is essential to adapt appropriate method at specific site.

Supervisory Control and Data Acquisition (SCADA) helps to deliver the required quantum of water, on-time, as per the pre-defined schedule by analyzing the complete network, for all scheduled/unscheduled requirements, generating various reports; trends, graphs etc. Statistics generated can be utilized for improving the water utility and in turn the canal efficiency. Canal monitoring and controlling schemes also help in resolving rural drinking and agriculture water problems improving the standard of

living in rural areas, thereby reducing the gap between rural and urban societies, bringing about the social and economic balance. Appropriate distribution of water will improve industrial output as well.

Implementation of SCADA for canal monitoring and control in developing countries is a task due to various reasons. Once successfully implemented, at one place, it can be adopted at other places with minor changes suitable for local conditions and to other developing countries wherein the situation will be almost similar.