

VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELGAUM



A Project Report on

“AUTOMATIC FLOW CONTROLLER USING CCD CAMERA WITH
OVERLOAD AND EXPLOSIVE DETECTION”

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ABSTRACT

Monitoring of dam back water is a very important aspect in irrigation as well as for hydro power stations and also for the security point of view. The older method to control the flow of water is through mechanical operated valves systems. Replacement to this old system is modern electromechanical valve which operate from electrical signals.. In microcontroller it is possible that to change the required levels. The increasing or decreasing level of back water level is picked up through sensing probes.

The microcontroller further connected to electromechanical valve arrangement, the valve goes to operate to close or open the gate and useful to control the flow of water. The electromechanical valve is fitted in the crest gate modules for controlling water flow. As per the required level of back water the controller provides a signal for electromechanical valve.

The dams which are a facility of transportation also have to monitor for its overloading of weights of vehicles. The over load sensors fixed here is a type of overload weight switch. On activating an overload switch the data has been send to microcontroller which drives the motor driving unit. The motor which is connected to a gate system where it goes to open or close as per the signal of microcontroller. The gate goes to close if motor rotates in its clock wise direction at a condition when a overloading vehicle passes. A bidirectional DC motor is used here for the movement of clockwise and anticlockwise direction. An alarm generator is used to indicate the condition of closing gate and this is placed in control room.

The safety of dam or bridge can be monitored by connecting different kind of sensors at different positions of dam like bomb detection sensor. A back water flow detector detects the average water at the normal levels with transistor as switching mode in case when the probe detects the over flow of water turn on the transmitter which is tuned for 8 kHz frequency.