

Dam Operation Based on Water Level

<https://www.youtube.com/watch?v=0WKUVUMHIX8>

This project presents an automated dam operation system using a PIC microcontroller, three water level sensors, an LCD display, a DC motor, and a dam gate mechanism. The system is designed to monitor water levels in a reservoir and automatically control the opening and closing of the dam gate based on predefined threshold levels.

Three water level sensors are placed at different heights to detect low, normal, and high-water levels in the reservoir. A PIC microcontroller reads the sensor inputs and makes decisions based on water levels. A DC motor, controlled by the microcontroller, operates the dam gate to regulate water discharge. The current water level status and gate position are displayed on a 16x2 LCD. The PIC Microcontroller used in the project is programmed using Embedded C language.

Objectives:

Automatic Dam Gate Control – Open and close the dam gate based on water levels.

Water Level Monitoring – Use sensors to check low, normal, and high-water levels.

Flood Prevention – Release excess water when levels are too high.

Water Conservation – Keep the gate closed when water is low.

Real-Time Display – Show water level and gate status on an LCD screen.

Reduce Manual Work – Automate the system using a PIC microcontroller.

Cost-Effective Solution – Use simple and affordable components.

Safe and Efficient – Ensure proper water flow and prevent sudden flooding.

The main blocks of this project are:

- ✓ Power supply.

- ✓ PIC Microcontroller.
- ✓ Three WATER LEVEL sensor.
- ✓ DC motor along with dam gate.
- ✓ LCD display.
- ✓ Reset Button
- ✓ Crystal Oscillator
- ✓ LED indicators.

Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.

BLOCK DIAGRAM:

