

MIE 303 Mechanical and Thermal Energy Conversion

Provide a detailed solution for the following problem. State all assumptions.

A river flowing steadily at a rate of $240 \text{ m}^3/\text{s}$ is considered for hydroelectric power generation. It is determined that a dam can be built to collect water and release it from an elevation difference of 50m to generate power. Determine how much power, in W, can be generated from this river water after the dam is filled.