

# NED UNIVERSITY JOURNAL OF RESEARCH



## OPTIMUM OPERATION POLICY FOR MANGLA RESERVOIR

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Volume: **1**

No: **1**

Pages: **39-48**

Date: **January 1994**

### **Abstract:**

A method of defining sequential operation policies for the multipurpose Mangla Reservoir, situated on River Jhelum in Pakistan is presented here. The inputs are the stream flows into the reservoir, which are described by the matrix of transitional probabilities. The design variables are the size of the reservoir and the capacity of hydro power plant. The state variables define the quantity of water in storage and the corresponding head on the turbines. Energy constraint, irrigation constraint etc. define the releases needed for the fulfillment of minimum power or irrigation requirement. The optimum operation policy is the set of decision (releases) for the operation period of one year. This is calculated on computer using stochastic dynamic programming equation. Comparison of actual "rule curves" with the rule curves derived from the optimum policy show that, for any year, except drought year, the releases suggested by this study give higher economic benefits from irrigation and power.

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