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On behalf of Ministry of Energy and Water Resources of Republic of Tajikistan



INVESTMENT PROJECT

CONSTRUCTION 850 MW SHUROB HYDROPOWER PLANT

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In 1973-1974 when developing the engineering design of the Rogun water-engineering system need of construction of Shurob hydroelectric power station came to light. Thus the counter regulator part following from requirements of optimization of an operating mode of the cascade of Vakhsh hydroelectric power stations, in general, and Roguns hydroelectric power station, in particular was assigned to it.

Location of Shurob hydrostation is defined in 12,5 kilometers below a dam of Rogun hydroelectric power station, with the size of falling of level between a reservoir constructed in 1980 by Nurek hydroelectric power station and normal water level of 66 meters. After completion of construction of Rogun hydroelectric power station, Shurob will work in its mode and to carry out limited daily regulation.

MAIN INDICATORS OF HYDROELECTRIC POWER STATION

Normal water level	977,0 m
Rated capacity: earth dam concrete dam	850 MW 900 MW
Mean annual development: earth dam Concrete dam	3100 GWh. 3200 GWh.
Reservoir volume: the full useful	27,0 million m3 5,0 million m3

CONFIGURATION OF THE MAIN CONSTRUCTIONS OF HYDROELECTRIC POWER STATION, TYPE AND DESIGN OF THE DAM

The accepted design of an earth dam is traditional – stone and earth with a loamy central kernel:

Dam body volume -2600 thousand m3

Dam height - 83,0 m

Crest mark (on 6m above normal operating level) - 983,0 m

The riding construction crossing point, 40 m high, is a part of a dam. A crossing point stone and earth, with the screen from rubble-loamy soil.

Two strings of construction and operational water waste constructions are placed on the right coast. Section of tunnels of trough-shaped 11x11 m, thickness of a ferroconcrete lining is up to 1 m, length of-960 and 1040 m.

Constructions of pressure head and station knot are located on the left coast and presented in the following structure:

Water intakes of hydroelectric power station of tower type

- the bringing tunnels

- open building of hydroelectric power station
- the taking-away channel

The hydroelectric power station building with 4 hydrounits:

the PO-75/728M-B-670 water-wheel – radial-axial type;

- CB 1430/225-64 type of hydrogenerator, powerfulness 212,5/250 MW/m CB

The building size in respect of 61,3x123,3 m.

The water supply to the building of hydroelectric power station is carried out by four strings of pressure head tunnels with a diameter of 9,0 m, 600 m long.

Power of Shurob hydroelectric power station is given at the voltage of 500 kV insert in VL-500 of kV Rogun hydroelectric power station – Dushanbe.

The accepted design of a concrete dam – gravitational, with cutting on section 30 m wide. In a body of a dam water intakes of hydroelectric power station and four bringing conduits with a diameter of 8,8 m with metal facing are placed.

MAIN VOLUMES OF CONSTRUCTION WORKS

Volumes of the main construction works on the recommended configurations with earth and concrete dams are presented by the table:

№	Types of the construction works	Unit measurements	The soil dam	The concrete dam
1	Open dredging - in all	Thousand m3	2369	1321
1.1	Not rocky soil		1038	741
1.2	Rocky soil		1331	580
2	Underground scum	Thousand m3	678	243
3	embankment		2958	488
4	Concrete and reinforced concrete		510	1052

CONSTRUCTION COST,

COST INDEXES OF CONSTRUCTION ARE DEFINED IN US DOLLARS:

№	Name	Unit measurements	The soil dam	The concrete dam
1	Objects of production appointment	thousand dollars. USA	823000	748000
2	Water reservoir		164000	164000
	Total		987000	912000

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