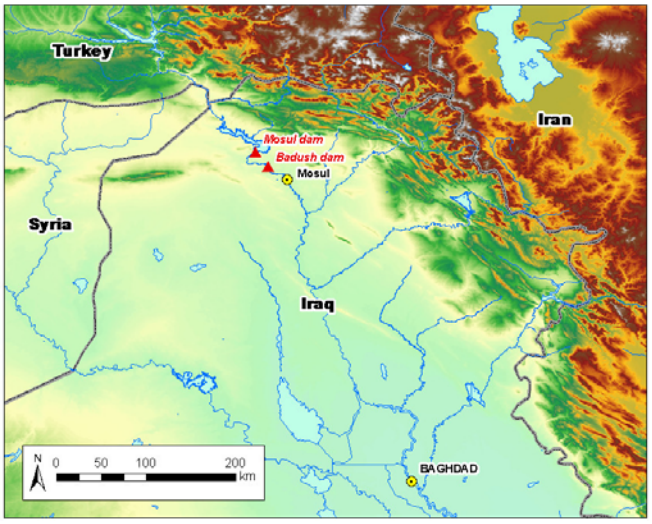
Badush Dam and HPP

Client: Iraqi Ministry of Water Resources

Beneficiaries: Iraqi Ministry of Water Resources

Project's description:

Currently, MED is working on the final design of the Badush Dam and Hydropower Project, located along the Tigris River just downstream Mosul dam in the north of Iraq. The main objectives of the reservoir is the production of hydropower energy and the regulation of the tailwater for the Mosul dam. The construction of the dam started in the 90's, but, due to several problems, such as lethal gas exhalation, the construction stopped. Now the old project needs to be revised and updated. Moreover an analysis of the gas exhalation problem and a training for the construction under peculiar conditions is requested.



The Badush dam project is composed of the following structures:

- Main earthfill dam. It has an inclined clay core with central part of random compacted fills. Both zones (clay and random fills) are supported by shells of compacted gravely materials (conglomerates). Both slopes are protected by rocky materials.
- Saddle dams (earthfills dams) at the left bank. There are two saddle dams of various height.
- Concrete dam (hollow buttress type) at the right river side 240 m long. The concrete dam includes 8 bottom outlets, a spillway and 4 power intakes and conduits, a stilling basin, headrace and tailrace channels.
- Power house, close to the concrete dam toe, with 4 Kaplan turbines.

The study shall consider the effects of the construction of Badush on the operation of Mosul Dam: in order to optimize and best utilize water resources and power generation the Mosul and Badush dams system will be evaluated together. After the construction of Badush dam, the two hydropower schemes will have to be managed as one system where rule of operations are adapted on a daily bases to maximize hydropower production.

Badush dam main characteristics	
Design flood level	250 m a.s.l.
Normal reservoir level	245.5 m a.s.l.
Minimum reservoir level	243.8 m a.s.l.
Total capacity (volume at el. 307 m a.s.l.)	10 BCM
Max. spillway capacity	4,000 m^3/s
Max outlets capacity	8,000 m^3/s
Power plant discharge capacity	1,100 m^3/s
Rated capacity (4 X 275)	1,100 m^3/s
Installed power capacity (4 X 42.5 MW)	170 MW
Length of dam crest	3,686 m
Dam crest level	312 m a.s.l.
Spillway crest level	300 m a.s.l.
Max height of the dam	102 m a.s.l.

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