LAHMEYER INTERNATIONAL

Rehabilitation Study **Dez HPP Iran**

The Dez Dam HEPP is one of the most important powerstations in Iran, located in the eastern area of the Khuzestan Province.

A 203 m concrete arch dam was built in 1963 in a very narrow valley. The Dez Dam is provided with two power tunnels with a diameter of 10 m and two spillway tunnels of 14 m and 12.6 m in diameter.

The HEPP's responsibility is power generation and regulation of the frequency in the national power network, comprising 8 Francis turbine units.

With regard to the operational life span of the HEPP of approximately 40 years the power output and efficiency was deteriorated and rehabilitation measures were urgently required. In order to find the most favourable rehabilitation scenario a rehabilitation study was performed.

The rehabilitation study covered the 8 main power units, the auxiliary equipment (e.g. cooling water system, dewatering system), electrical equipment, instrumentation and control system. Also the civil structure of the dam, waterways and the powerhouse cavern were subject of this study.

For the 8 power units performance tests were carried out to evaluate the present condition of the equipment and to prepare a comprehensive economic analysis.

Client:
Islamic Republic of Iran, Minister of Energy
Khuzestan Water and Power Authority (KWPA)

Main Data:

Powerhouse cavern

• Francis turbines	8 Units
• Turbine design discharge	59.2 m³/s
• Normal head	152 m
• Normal turbine output	80.8 MW
• Cavern size L/W/H	75/18/35 m
• Normal turbine output	80.8 MW

Thin arch concrete dam

• Height	203 m
• Ratio W:H	11:1
• 2 power tunnels	dia. 10 m
• 2 spillway tunnels	dia. 12.6/14 m

Execution: 2002 - 2003

Consultancy Services:

- Equipment functional (performance tests) and visual site inspection
- Assessment and evaluation of E&M equipment condition and civil structures
- Elaboration of recommended rehabilitation scenario; economical analysis
- Preparation of tender documents for plant components