Investigations, Laboratory Tests, Geotechnical and Geomechanical Studies.

- Programming of site and laboratory geognostic investigations & relevant technical specifications.

- Supervision of site and laboratory investigations.

- Data analysis and interpretation.

- Geotechnical studies, including definition of geotechnical design parameters, appraisal of local and overall stability of excavations, embankments and foundation works.

- Design and technical specifications of monitoring systems, including processing and interpretation of measurements.

Seismic Risk Evaluation and Dynamic Analysis of Structures

- Seismic risk analysis of the project area.

- Modelling and analysis of the local seismic response, evaluation of the dynamic

parameters of the Maximum Credible Earthquake and of the Design Earthquake.

- Finite element mathematical models for the study of dynamic interaction between a structure and its foundation.

- Appraisal of liquefaction phenomena.

Physical Hydraulic Models

- Definition of the hydraulic design features worth to be analyzed through physical models.

- Preparation of technical specifications and planning of tests.

- Assistance during tests, analysis and interpretation of results.

Mathematical Models

- Finite element models (FEM) to calculate distribution of stresses in the structures, in the corresponding foundations and in the rock masses.

- Finite element models for the static and dynamic analysis of loose material dams and underground works, adopting different behavior laws for soils and rocks.

- Finite difference and finite element models for the analysis of seepage and consolidation problems.

- Models for the study of free and pressure flow water discharge and transients in hydraulic systems.

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