International Association for Engineering Geology and the Environment

IAEG C 28 - Reliability quantification of the geological and geotechnical model in large civil engineering projects

Terms of Reference

The Italian group of the IAEG started in September 2007 the woks of a national technical commission on this topic. According to the discussion undertaken by Italian group (see http://www.iaeg.it/comm_opere_sott.htm), the C28 should develop guidelines for the quantification of the reliability of geological and geotechnical models in large civil engineering works (e.g. tunnels, dams, roads, underground works). Provide expressions of reliability/uncertainty of the geological, geotechnical, geomechanical and hydrogeological conditions affecting the works.
The IAEG C28 will pursue some main tasks, gaining experience coming also by some recent approaches and methodologies followed by other scientific disciplines that must face with *uncertainty*:

1. understand the meaning of *uncertainty* and *reliability* in Geology and Geotechnic;

2. list methods for collecting, organizing and analysing geological data;

3. examine the role of the geological investigations for improving model reliability;

4. propose procedures for the quantification of the effectiveness of the used investigation methodologies;

5. integrate the quantification of geological reliability in risk analysis; this should improve the effectiveness of risk sharing in contracts between the Owner, the Engineer and the Contractor;

6. show examples of completed large civil works where the quantification of geological reliability affected the project development;

7. develop and maintain a dedicated area within the IAEG web site, open for external contributions;

8. communicate progress via IAEG web site (using a semestral dedicated Newsletter) and meetings.

9. present a comprehensive report at 2014 World Congress in Turin, Italy.