

Funkhull

RECENT DEVELOPMENTS IN
Geotechnical Engineering
FOR
Hydro Projects:

*EMBANKMENT DAM INSTRUMENTATION PERFORMANCE,
ENGINEERING GEOLOGY ASPECTS,
ROCK MECHANICS STUDIES*

Proceedings of three sessions sponsored by the
Geotechnical Engineering Division
at the ASCE International Convention
New York City, May 11 and 12, 1981

Fred H. Kulhawy, Editor



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PREFACE

Every large hydro project is unique and, as such, poses new and interesting engineering and geologic challenges. The resolution of these challenges, and the experiences and knowledge gained in the process, are important for advancing the profession. In this context, it is valuable to review and summarize the state-of-the-art at frequent intervals. The opportunity for this presented itself during the planning for the ASCE International Convention in New York City during May 1981.

Three committees of the Geotechnical Engineering Division of ASCE (Embankment Dams and Slopes, Engineering Geology, and Rock Mechanics) developed specialty sessions for this meeting which addressed questions relating to large hydro projects. Authors of papers in these sessions were invited to submit formal manuscripts for inclusion in this special publication. The submitted papers were reviewed in accordance with the same procedures used by the Publications Committee of the Geotechnical Engineering Division. Members of the three sponsoring committees and the publications committee, as well as at-large ASCE members, reviewed the papers. A thank you is extended to all the reviewers for undertaking this task.

The session on Instrumentation Reliability and Long-Term Performance Monitoring of Embankment Dams was organized by the writer on behalf of the EDS Committee. The writer also coordinated the paper reviews. The papers on this topic provide valuable guidelines for the use of instrumentation to monitor long-term performance of embankment dams and summarize experiences with long-term monitoring.

The session on Engineering Geology of Large Hydro Projects was organized by Mr. Jerry S. Dodd of the Water and Power Resources Service on behalf of the EG Committee. Mr. Dodd was assisted by Mr. Robert B. MacDonald, also of the W.A.P.R.S., in coordinating paper reviews. The papers on this topic summarize experiences on the engineering geology of dam foundations.

The session on Rock Mechanics of Large Hydro Projects was organized by Professor Charles Fairhurst of the University of Minnesota on behalf of the RM Committee. The writer coordinated paper reviews. The papers on this topic focus on the design of large underground caverns and summarize experiences with in-situ stress measurements.

Discussion of these papers is invited. Those wishing to do so should submit a formal discussion to the ASCE for publication in the Journal of the Geotechnical Engineering Division. The closing date for submission is December 1, 1981.

Fred H. Kulhawy, Cornell University
Editor

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