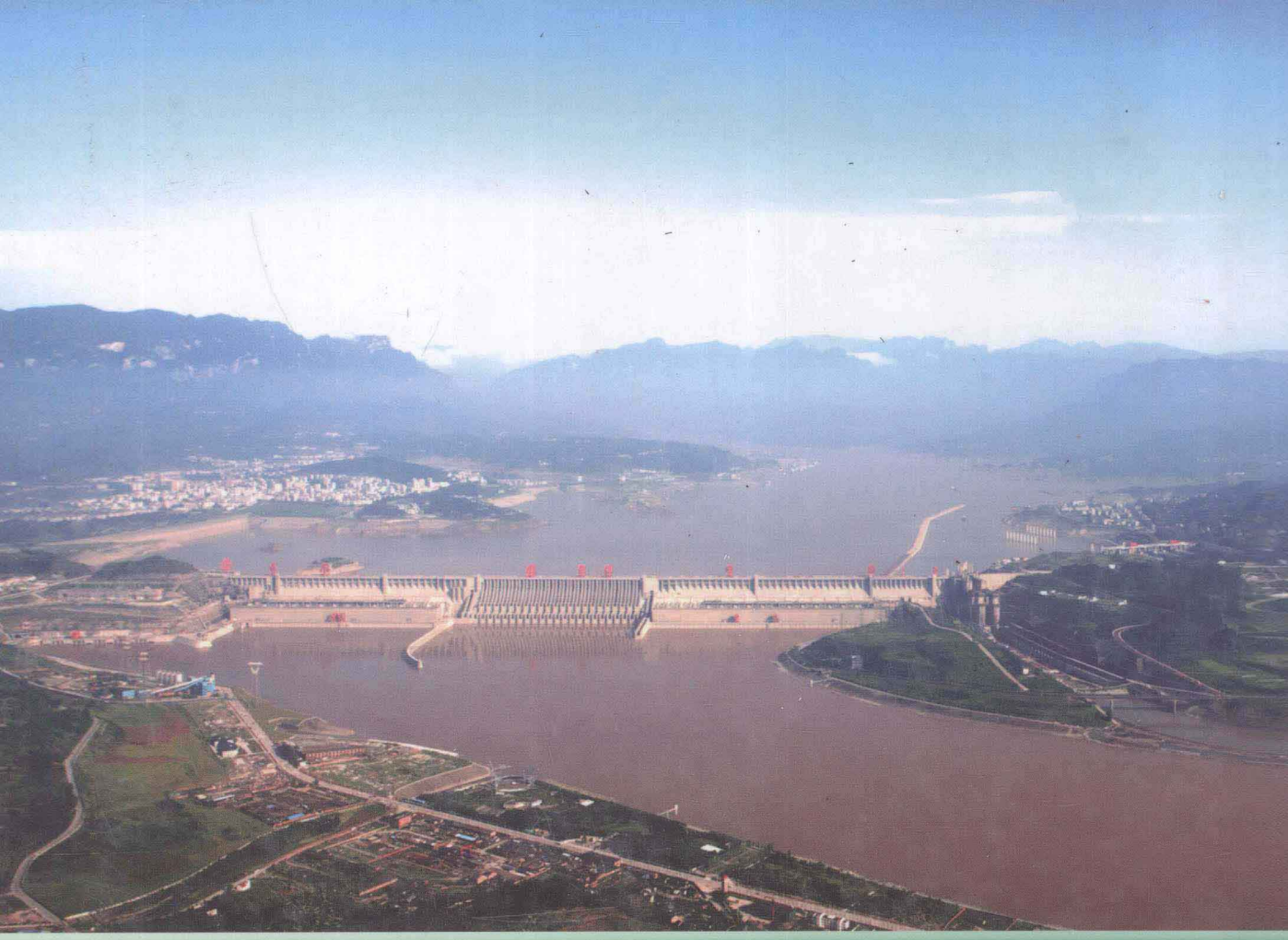

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Preface

In recent years, the global economic and social development has encountered many difficulties and problems, such as earthquakes, tsunamis, hurricanes, floods, severe droughts, climate changes, energy and economic crises. History of human development has demonstrated that dam has played and will continue to play an important role in addressing the difficulties and challenges. Dam, which has direct relationship to flood control, food security, water security and energy security, has already become an important part of modern social infrastructures. Therefore, nowadays the construction of dams is further strengthened in stead of weakened.

In 2011, Chinese government has issued the "No. 1 document" on accelerating the reform and development of water resources. The document put water security to the high level of the strategic security of the country and takes water infrastructure as the prior area of national development. Recently Chinese government held the top-level meeting on water-related issues. All these actions of the government have signaled a new round of opportunities for China's water resources and hydropower development and dam construction. As most of the potential projects are located in the southwestern mountainous regions, which have large-scale engineering, complicated geology, poor construction conditions, great challenges will be encountered in the construction. Besides, a lot of existing dams built in the 1950s and 1960s have been running for many years, resulting in a huge task of maintenance and reinforcement due to serious aging issues of disrepair. Under the new situations to meet the requirement of building a resource-saving, eco-friendly society, China's dam construction has made a lot of useful exploration in playing ecological function of dams. In general, the practice of China's dam construction has made great achievements while relevant theoretical studies and experience summary are lagging behind the engineering practices. Therefore, it is necessary to strengthen theoretical studies and absorb research results and engineering practices from both at home and abroad. By widely accepting expert wisdom and further improving construction quality and operation management, dam construction could bring better benefits to mankind.

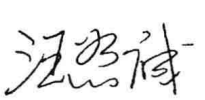
The International Symposium on Modern Technologies and Long-term Behavior of Dams is the continuity of the series conferences of East Asia Dam Conference (EADC) and Long Term Behavior of Dams (LTBD). Chinese National Committee on Large Dams (CHINCOLD), Japan Commission on Large Dams (JCOLD) and Korean National Committee on Large Dams (KNCOLD) have jointly hosted six rounds of EADC since 2004. Till now, LTBD has been jointly organized by universities from China and Austria, already going through for two consecutive terms.

To sum up the great achievements of concrete dam technology and identify those milestone projects in the field of dam engineering, with the support of the international experts, Chinese

National Committee on Large Dams (CHINCOLD) and United States Society on Dams (USSD) together initiated the International Milestone Project Award on Concrete Dams. This proposal gained the support of President of International Commission on Large Dams (ICOLD), Mr. Jin-sheng Jia, Honorary Presidents of ICOLD, Mr. L. Berga (Spain), Mr. G. Lombardi (Switzerland), Mr. CB Viotti (Brazil), CVJ Varma (India) and W. Pircher (Austria) as well as the positive responses from ICOLD National committees of relevant countries. Their support and participation has played an important role in recommending and determining the milestone projects. After nomination, preliminary evaluation and re-evaluation, the milestone projects of concrete dams have been finalized. Those selected milestone projects are not only the symbol of the achievements of concrete dam construction but also the basis for us to construct new dams, which shall remain important reference value in future's development of concrete dams.

The symposium has received about 120 papers from more than 20 countries, which, of wide-ranging contents, have displayed both the latest progress and the new challenges on dam design, construction, operation and management of each country. In order to better report the outcome of the symposium, the accepted representative papers are included in this proceedings. The papers in the proceedings cover the following fields: (1) Methods of Design and Analysis for Dams; (2) Environment-friendly Technologies for Dam construction; (3) Long-term Operation and Maintenance of Dams; (4) Dam Rehabilitation and Upgrade; (5) Dam Safety Assessment and Risk Management; and (6) Reservoir Management.

The symposium has gained strong support from the sponsors, organizers, and co-sponsors of this symposium, including the Yellow River Conservancy Commission of the Ministry of Water Resources of the People's Republic of China (MWR), Department of Water Resources of Henan Province, China Three Gorges Corporation, Xiaolangdi Dam Project Construction and Management Bureau, China Institute of Water Resources and Hydropower Research, Henan Provincial Water Conservancy Research Institute, JCOLD, KNCOLD, USSD, China Huaneng Group, China Huadian Corporation, etc. We would like to deliver our sincere gratitude to all of them.



WANG Shucheng

President of Chinese National Committee on Large Dams

Chairman of Organizing Committee of International Symposium on Modern Technologies and Long-term Behavior of Dams

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