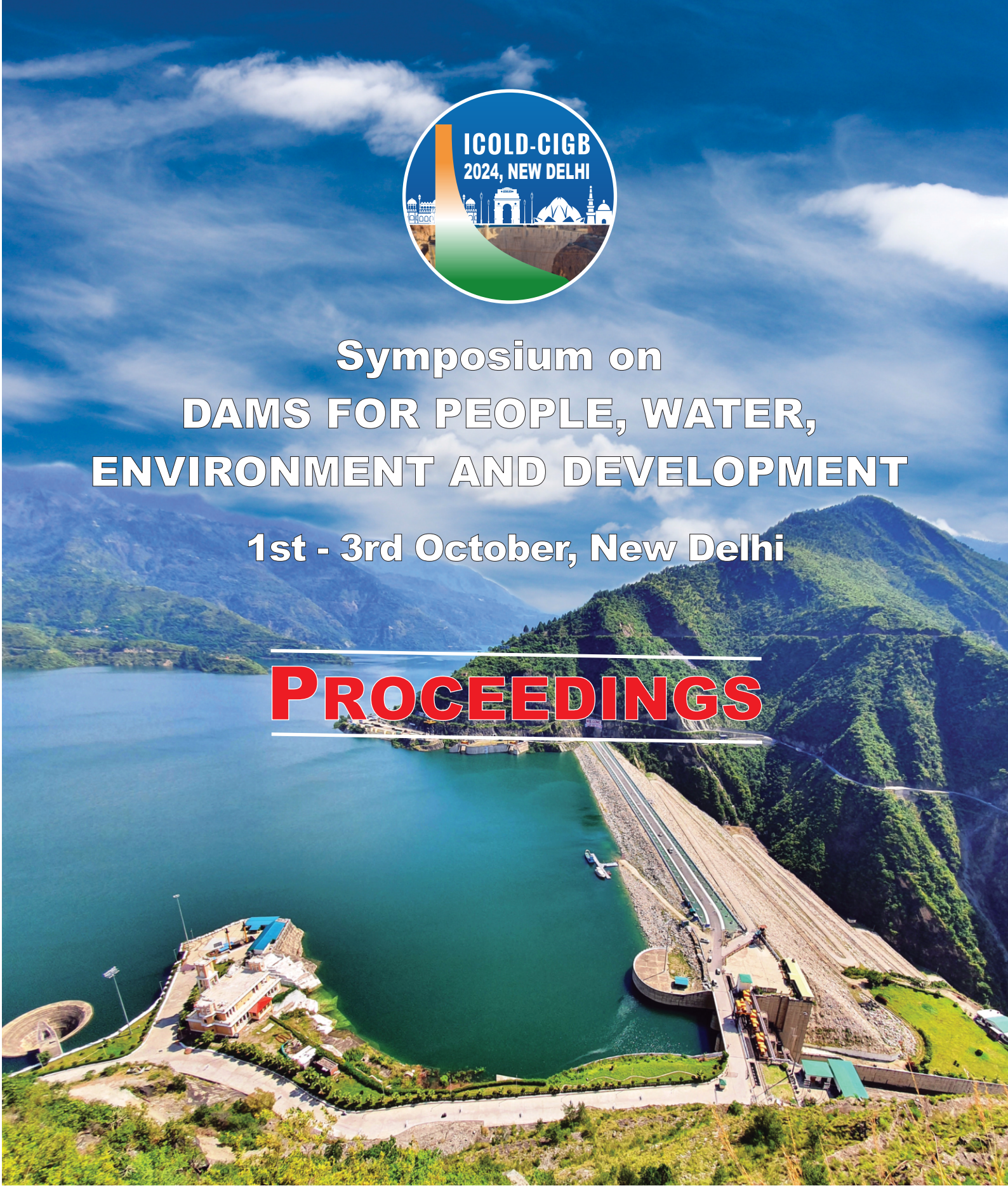

Symposium on
DAMS FOR PEOPLE, WATER, ENVIRONMENT AND DEVELOPMENT

1st - 3rd October, New Delhi

PROCEEDINGS

CIGB ICOLD

INCOLD

CENTRAL BOARD OF IRRIGATION & POWER
ESTD. 1927
New Delhi

Our Partners

Co-organizer

एनएचपीसी NHPC

State Partner

WRD Maharashtra

Diamond Sponsor

एनटीपीसी NTPC

टीएचडीसी इंडिया लिमिटेड THDC INDIA LIMITED

एसजेवीएन SJVN

आरईसी REC असीमित ऊर्जा, अनन्त संभावनाएं Endless energy. Infinite possibilities.

नीपको NEEPCO

greenko

Platinum Sponsor

SMEC

Member of the Surbana Jurong Group

Silver Sponsor

BBMB

Est. 2003 DYNASOURE CONCRETE TREATMENT PVT. LTD.

MIDAS

carpi

BAUER ENGINEERING INDIA

Bronze Sponsor

दामोदर DVC

वाप्कोस WAPCOS

GRIL GR Infraprojects Ltd.

Supporter

wsp

UJVNL

AECOM Delivering a better world

JSL JINDAL STAINLESS

Lunch Sponsor

NGI

Media Partner

HYDROPOWER & DAMS

TNA Tailings News Alerts

FOREWORD

It is with great pleasure that I present the Proceedings of the International Symposium, held as part of the 92nd Annual Meeting of the International Commission on Large Dams (ICOLD) at Bharat Mandapam, New Delhi, from September 29 to October 3, 2024. This esteemed event has served as a milestone for the global community of dam engineering and water resource professionals, providing a distinguished platform for experts to share their insights, innovative solutions, and experiences in the fields of dam construction, management, and safety.

The theme of the symposium, "Dams for People, Water, Environment, and Development," directly addresses some of the most pressing challenges in sustainable water resource management today. It reflects the urgent need for innovative solutions to support both environmental sustainability and socio-economic development. To guide discussions, papers were invited on the following key themes:

1. Dam Engineering and Construction
2. Dam Rehabilitation and Improvement
3. Dam Safety Management and Engineering
4. Dams and Climate Change Adaptation
5. Dams and People
6. Dams and Renewable Energy
7. Environmental and Social Aspects
8. Evolving with Modern Technology in Dam Construction
9. Integrated Reservoir Management (Basin Approach)

We are proud to report an overwhelming response to the call for papers. From 80 countries, we received 353 full-text technical papers from leading dam experts worldwide, and 219 of these papers were presented during 35 technical sessions. In addition, more than 33 presentations were delivered in parallel workshops that provided in-depth discussions on specialized topics.

The technical papers featured in this volume reflect the collective expertise and experience of over 400 experts from around the world, contributing to a rich dialogue on key aspects of dam technology, engineering, and environmental management. These papers address critical issues such as dam safety, flood management, hydropower development, and the integration of renewable energy into dam projects, as well as the broader social and environmental implications of dam development.

This compendium is not just a record of advancements in dam engineering, but also a testament to the power of global collaboration in tackling the complex challenges of our time—climate change, population growth, and the need for sustainable water management. As we continue to strive for a future where water security is central to human development, the knowledge and insights shared through this symposium will serve as an invaluable guide for policymakers, engineers, and stakeholders alike.

I extend my heartfelt thanks to all the authors for their exceptional contributions and to the reviewers whose efforts have ensured the quality and rigor of these proceedings. I would also like to express my deepest appreciation to the organizing committee, sponsors, and our esteemed partners for their unwavering support in making this symposium a resounding success.

I am confident that these proceedings will serve as a lasting resource for professionals in the field and inspire future research, innovation, and collaborative efforts in the dam engineering sector.

Warm regards,

A.K. Dinkar
Secretary General, INCOLD

CONTENTS

Dam Engineering and Construction