

PROGRAMME OF SESSIONS

Monday, 22 October

17:00 – 20:00 REGISTRATION AND COLLECTION OF DOCUMENTATION

Tuesday, 23 October

09:00 – 09:30 OPENING SESSION

09:30 – 11:00 SPECIAL CONFERENCES

Chairman: *L. Berga (Spain)*

RCC DAMS IN SPAIN

J.C. de Cea (Spain)

RCC AND CMD DAMS IN CHINA

JIA Jinsheng (China)

NEW DEVELOPMENTS IN RCC DAMS

M.H.R. Dunstan (United Kingdom)

11:00 – 11:30 OPENING OF THE TECHNICAL EXHIBITION

11:00 – 11:30 COFFEE BREAK

11:30 – 13:15 SESSION 1

NEW DEVELOPMENTS IN RCC DAMS

PRESENTATION OF ORAL COMMUNICATIONS

LESSONS LEARNED AND INNOVATIONS FOR EFFICIENT RCC DAMS

F. Ortega Santos (Germany)

EXPERIENCES WITH RCC DAMS IN MEXICO

F. I. Arreguin-Cortes, R. Murillo-Fernández (Mexico)

RECENT DEVELOPMENT IN RCC DAMS TECHNOLOGY IN MOROCCO

A.F. Chraibi (Morocco)

CONSTRUCTION OF AN RCC DAM IN A VERY WET CLIMATE

J. Waters, D. Cameron-Ellis, M.R.H. Dunstan, L. Houlberg, C. Hicks (Australia)

DIAMER BASHA DAM STATUS & POTENTIAL RCC MIXES

E. Schrader, I.U. Haq, M. Arshad Pervez (United States)

GUANDI HIGHLY RCC GRAVITY DAM – CHALLENGES, SOLUTIONS AND LESSONS

Chen Qiang, Hu Xiao-Hong, Zhao Yong-Gang, Zhang Lian-Ming, Yuan Qion (China)

PORTUGUES DAM: CHALLENGES AND SUCCESS IN FOUNDATION DOCUMENTATION AND TREATMENT

S. Myers, J. Conway (Puerto Rico)

STRUCTURAL FEATURES OF GOMAL ZAM RCC ARCH-GRAVITY DAM

Chongjiang Du (Alemania)

NEW TECHNOLOGY ON VERTICAL CONVEYANCE OF CONCRETE BY FULL-BIN SYSTEM IN GUANGZHAO DAM PROJECT

Wu Xiurong, Chen Zurong (China)

THE USE OF 400 MM RCC LIFTS IN THE ENLARGED COTTER DAM

P. Buchanan, D. Nott, B. Egaliat, B. Forbes (Australia)

13:15 – 14:15 LUNCH

14:15 – 16:00 SESSION 2

PLANNING AND DESIGN (PART 1)

PRESENTATION OF ORAL COMMUNICATIONS

DISCUSSIONS ON DESIGN PRINCIPLE FOR SUPER HIGH GRAVITY DAMS BASED ON SIMULATION TEST OF HYDRAULIC FRACTURING

Jia Jinsheng, Wang Yang, Feng Wei, Chang Qingrui (China)

HRB WALDBÄRENBURG: FIRST RCC DAM EXPERIENCE IN GERMANY

B. Lange, F. Hering, R. Schlegel, G. Leyendecker, F. Ortega (Germany)

INFLUENCE OF DIFFERENT LAYER THICKNESS AND INTERMITTENT TIME ON HIGH RCC GRAVITY DAM TEMPERATURE STRESS

Li Song-Hui, Zhang Guo-Xin, Liu Yi (China)

JOINT VISION BY DESIGNER AND CONTRACTOR FOR THE DESIGN OF AN RCC DAM

L. Canale, Ö. Özen, E. Eroğlu (Switzerland)

MAIN DESIGN FEATURES OF A RCC GRAVITY DAM IN PORTUGAL

A. Camelo, N. Antunes, D. Botelho (Portugal)

MINIMUM REQUIREMENTS FOR THE FOUNDATION OF RCC DAMS IN BORDER-LINE TERRAINS

M. Romana (Spain)

MOVING SUCCESSFULLY FROM A CONVENTIONAL CONCRETE INTO AN RCC DESIGN FOR PORTUGUES DAM

P. Vázquez, A. Gonzalez (Puerto Rico)

NONLINEAR BEHAVIOUR OF A ROLLER COMPACTED CONCRETE DAM UNDER STRONG EARTHQUAKE

D. Grenier, A. Si-Chaib, A. Alami (France)

SIMULATION OF TEMPERATURES AND STRESSES DURING CONSTRUCTION OF A RCC DAM

L.M. Lacoma, J. Rodriguez, J. Marti, F. Martinez (Spain)

STUDYING THE EFFECT OF STARTING TIME OF CONCRETE ON THERMAL RESPONSE OF ROLLER COMPACTED CONCRETE DAM

M. Esmailnia Omran, Z. Ghadiri (Iran)

16:00 – 16:30 COFFEE BREAK

16:30 – 18.00 SESSION 2

PLANNING AND DESIGN (PART 2)

PRESENTATION OF ORAL COMMUNICATIONS

DESIGN OF FOUNDATION REMEDIATION FOR A RCC DAM

E. Yildiz, A. Fikret Gürdil (Turkey)

THE DEVELOPMENT OF THE DESIGN OF CHANGUINOLA 1 DAM

G. Erlendsson, D. Cameron-Ellis, Q.H.W. Shaw, M.R.H. Dunstan (Denmark)

THE FOUNDATION OF HARDFILL DAMS. EFFECTS OF SEISMICITY

M. Romana, AR. Martinez-Sidera (Spain)

THE INFLUENCE OF LOW STRESS-RELAXATION CREEP ON LARGE RCC ARCH & GRAVITY DAM DESIGN

Q. Shaw (South Africa)

THERMAL RESPONSE OF RCC DAMS CONSIDERING THE EFFECT OF RESERVOIR FILLING SCHEDULE

P. Khanzaei, F. Hejazi, A.A. Abdulrazeg, M. Saleh Jaafar, T. Ahmed Mohammed (Malaysia)

THREE RECENT GEOMEMBRANE PROJECTS ON NEW RCC DAMS

A. Scuero, G. Vaschetti (Switzerland)

STUDY AND APPLICATION OF IMPROVED EQUIVALENT STRESS OF FINITE ELEMENT METHOD OF GRAVITY DAMS

Yang Huichen, Jia Jinsheng, Zheng Cuiying (China)

DE HOOP DAM: SOUTH AFRICAN RCC ADVENTURES

H.J. Wright, J. Van Zyl (South Africa)

18:00 – 18:30 LECTURE

INNOVATIONS IN RCC DAMS
B. Forbes (Australia)

20:30 WELCOME DINNER

Wednesday, 24 October

09:00 – 09:30 LECTURE

RCC AS DAM CONSTRUCTION MATERIAL
R. Ibáñez de Aldecoa

09:30 – 11.00 SESSION 3

MATERIAL AND MIXTURES (PART 1)

PRESENTATION OF ORAL COMMUNICATIONS

ACCELERATE CURING TEST: HISTORY. DEVELOPMENT AND APPLICATIONS

J. E. López, E. Schrader (Colombia)

APPLICATION RESEARCH ON LOW HEAT AND HIGH PERFORMANCE HYDRAULIC MASS CONCRETE

Zhang Xihe, Yang Jindi, Tan Jianjun (China)

CHANGES IN THE WORLD ECONOMY INFLUENCES THE CHOICE OF CEMENTITIOUS MATERIALS AT CHANGUINOLA 1

E. Lose, M.R.H. Dunstan (Denmark)

CHOICE OF POZZOLANS FOR USE IN THE CEMENTITIOUS CONTENT OF LARGE RCC DAMS

U Myint Zaw, Ondrej Voborny, Nguyen Hong Ha, David Morris, M.R.H. Dunstan (Burma)

RAW MATERIALS SELECTION AND RCC MIXTURE OPTIMIZATION IN EL PUENTE DE SANTOLEA'S DAM

J. Gracia, M. Cabedo (Spain)

EXPERIENCE MADE WITH RETARDER ADMIXTURES AT TWO RCC DAMS IN MYANMAR

U Myint Zaw, U Zaw Min San, S.L.L. Cowie, C. Rohrer (Burma)

FEASIBILITY STUDY OF USING ONE PORTION OF AGGREGATE IN KAHIR RCC DAM

M. Shahgholi, M. Jafarbegloo, M.R. Hajjalikhani (Iran)

LIMESTONE FILLER USED AS MINERAL ADMIXTURE IN THE RCC MIX FOR LA BREÑA II DAM (SPAIN)

R. Ibáñez de Aldecoa, G. Noriega, F. Romero, A. Sandoval, M. Sanz (Spain)

MIXTURE DESIGN AND OPTIMIZATION OF RCC OF GUAN-DI HYDROPOWER STATION

Chenlei Nieqiang (China)

11:00 – 11:30 COFFEE BREAK

11:30 – 13:15 SESSION 3

MATERIAL AND MIXTURES (PART 2)

PRESENTATION OF ORAL COMMUNICATIONS

PRACTICE OF HIGH-INTENSITY BASALT GRAVEL AGGREGATE PRODUCTION SYSTEM IN GUANDI HYDROPOWER STATION

Zhao Yunliang, Zhang Chaofeng (China)

RCC MIX DESIGN DEVELOPMENT FOR ENCISO DAM

M. Allende Álvarez, D. Cruz García, F. Ortega Santos (Spain)

RCC MIXTURES FORMULATION FOR TABELLOUT DAM

M. Khalfallah, A. Si-Chaib, K. Mokrani (France)

RCC TRIAL MIX PROGRAMME FOR THE LAI CHAU GRAVITY DAM – HIGH CEMENTITIOUS CONTENT RCC WITH VERY LOW CEMENT CONTENTS

Nguyen Pham Hung, M. Conrad, D. Morris, M.R.H. Dunstan (Vietnam)

RESULTS OF MIX DESIGNS IN ZIRDAN RCC DAM

M. Jafarbegloo, M.R. Hajjalikhani (Iran)

RIZZANESE RCC DAM : USE OF LOW COST RCC IN A THICK CROSS SECTION

F. Delorme, A. Lochu, R. Valon (France)

THE EXPERIMENTAL ANALYSIS OF ALKALI-CARBONATE REACTIONS ON RCC DAMS IN IRAN

N. Tavakoli Shirazi, G. Hossein Akbari (Iran)

THE LOW STRESS RELAXATION CREEP CHARACTERISTICS OF FLYASH-RICH RCC

Q.H.W. Shaw, M.R.H. Dunstan (South Africa)

THE OPTIMIZATION OF THE RCC MIX DESIGN OF THE SPRING GROVE DAM IN SOUTH AFRICA

J. Nyakale, D.B. Badenhorst, F. Ortega Santos (South Africa)

USE OF A HIGH SHRINKAGE AGGREGATE IN A NEW RCC DAM

D. Nott, B. Forbes, D. Brigden (Australia)

13:15 – 14:15 **LUNCH**

14:15 – 16:00 **SESSION 4**

CONSTRUCTION AND QUALITY CONTROL (PART 1)

PRESENTATION OF ORAL COMMUNICATIONS

DIGITAL MONITORING SYSTEM AND APPLICATION ON LUDILA PROJECT

Zhang Guo-Xin, Li Song-hui, Liu Yi (China)

FEEDBACK ANALYSIS ON CAUSES AND MECHANISM OF CRACK FORMATION AND EFFECTS OF TEMPERATURE CONTROLLING AND CRACK PROTECTING DURING CONSTRUCTION OF RCC DAMS

Liu Youzhi, Xu Bo, Zhang Guo-Xin, Shi Ziming, Liu Tao (China)

INVESTIGATION OF DIFFERENT PARAMETERS ON SHEAR STRENGTH AND PERMEABILITY OF CONSTRUCTION JOINTS

Mokhtar Pouryani, F. Ghadermazy, H.R. Araghyan, Sh. Mahzarnya (Iran)

QUALITY CONTROL IN ZIRDAN RCC DAM

M. Jafarbegloo, M.R. Hajjalikhani (Iran)

DEVELOPMENT OF THE RCC FOR MIDDLE VAITARNA DAM, INDIA

V.B. Astankar, G.V. Rao, S. Mane, M.R.H. Dunstan (India)

RCC DAM CONSTRUCTION QUALITY CONTROL – NUCLEAR GAUGE DENSIMETER CALIBRATION

J.E. López, E. Schrader (Colombia)

USE OF A GEOGRAPHIC INFORMATION SYSTEM AS A TOOL DURING THE CONSTRUCTION OF THE PIRRIS RCC DAM IN COSTA RICA

D. Núñez Morales, F. Ortega Santos (Costa Rica)

A UNIQUE CEMENT AND FLY ASH SUPPLY SYSTEM FOR THE CHANGUINOLA I PROJECT IN PANAMA

A. Ligthart, C. Hicks (Holland)

ASSESSMENT OF RCC CONSTRUCTION METHODOLOGY BETWEEN YEYWA AND UPPER PAUNGLAUNG RCC DAMS IN MYANMAR

U Myint Zaw, U Zaw Min San, S.L.L. Cowie, C. Rohrer (Burma)

16:00 – 16:30 **COFFEE BREAK**

16:30 – 18:30 **SESSION 4**

CONSTRUCTION AND QUALITY CONTROL (PART 2)

PRESENTATION OF ORAL COMMUNICATIONS

CHARACTERIZATION AND QUALITY CONTROL OF RCC DAM PRESA DEL PUENTE (TERUEL, SPAIN)

J. Arroyo Alonso, L. Fernández Almiñana, A. Sánchez Lallana (Spain)

CONSTRUCTION OF PIRRÍS RCC DAM IN COSTA RICA

I. Arguedas Gamboa, A. Rivera Hernández, F. Ortega Santos (Costa Rica)

CONSTRUCTION TECHNOLOGY OF RCC DAM COMPOSED OF SANDSTONE AGGREGATE IN TROPICAL RAINFOREST

Zhu Hong bin, Yang Bai hua, Fu Jian ping, Cui Dan (China)

DESIGN AND BUILD OF RIZZANESE RCC DAM

A. Lochu, F. Delorme, P. Carlioz (France)

DESIGN AND CONSTRUCTION OF NAKAI RCC DAM, LAOS

G. Stevenson, R. Douglas, M. Matsuzaki (Canada)

DYNAMIC CONSTRUCTION SIMULATION OF HIGH ROLLER COMPACTED CONCRETE DAM

Denghua Zhong, Haotian Chang, Mingchao Li (China)

EL PUENTE DE SANTOLEA'S DAM EXPERIENCE

M. Cabedo, B. Roldán, J.I. López (Spain)

RAPID CONSTRUCTION TECHNOLOGY OF GUANDI RCC GRAVITY DAM

Zhao Yunliang, Zhang Chaofeng (China)

ENCISO DAM: GEOLOGICAL AND GEOTECHNICAL CONSTRAINTS OF THE FOUNDATION. CONSOLIDATION TREATMENT

M. Allende Álvarez, D. Cruz García, A. Soriano Martínez, A. Andrino Sigilo, D. Chuliá Sanz (Spain)

20:30 SOCIAL EVENT

Thursday, 25 October

09:00 – 11:00 SESSION 4

CONSTRUCTION AND QUALITY CONTROL (PART 3)

PRESENTATION OF ORAL COMMUNICATIONS

LESSONS LEARNED IN ZIRDAN RCC DAM

M.R. Hajjalikhani, M. Jafarbegloo (Iran)

NOT ONLY SIZE MATTERS CONSTRUCTING NAKAI RCC DAM FOR NAM THEUN 2 PROJECT IN LAOS

A. Rousselin, F. Delorme, B. Taquet (France)

PRACTICAL EXPERIENCES FOR CONSTRUCTION OF RECENT RCC DAMS IN IRAN CONSIDERING ADVANCED TECHNOLOGIES

A. Dolatkahi, R. Peyrovdin, M. Navidi Kashani, S. Mahzarnia (Iran)

RCC DAM CONSTRUCTION – CONVEYORS OR TRUCKS

J.E. López, E. Schrader, L. Gaekel (Colombia)

RCC DAM CONSTRUCTION TECHNIQUE INNOVATION OF JINANQIAO HYDROPOWER STATION ON JINSHAJIANG RIVER

Li Xianzhen (China)

RCC DAMS BUILT BY SPANISH CONSTRUCTION COMPANIES ABROAD

A. Capote del Villar, R. Ibáñez de Aldecoa, V. Flórez Casillas (Spain)

APPLICATION OF RCC DAM CONSTRUCTION TECHNIQUE IN XIANGJIABA HYDROPOWER STATION

Gao Peng, Mei Xuedong, Peng Gang, Wang Yi (China)

REVIEW OF THE CONSTRUCTION OF THE SON LA RCC DAM

Nguyen Hong Ha, Marco Conrad, David Morris (Vietnam)

SCENARIO OF RCC DAMS IN MEXICO

A. Garduño Gallo, M.A. Montero Catalán (Mexico)

LONGITUDINAL JOINT BEHAVIOR IN A TWO STAGE CONSTRUCTION OF CASTANHÃO DAM

W. Jardim, M. Pinto (Brasil)

11:00 – 11:30 COFFEE BREAK

11:30 – 12:45 **SESSION 4**

CONSTRUCTION AND QUALITY CONTROL (PART 4)

PRESENTATION OF ORAL COMMUNICATIONS

STUDY ON EXISTING PROBLEMS AND COUNTERMEASURES OF ROLLER COMPACTED

Dong Hao-Wen, Tang Shun-Cheng, Ji Wei (China)

IMMERSION VIBRATED RCC (IVRCC) FIRST WORLD EXPERIENCE AT DE HOOP RCC DAM IN SOUTH AFRICA

J.F. van Niekerk, J. van Niekerk, F. Ortega Santos (South Africa)

CONSTRUCTION OF GUANDI RCC DAM

Shiyong Wu, Shangyuan Yan, Lei Yao, Dan Zhao, Fugang He (China)

THE SPECIFICATION OF THE EFFECTIVE METHOD FOR DEMOLITION OF HARDENED ROLLER COMPACTED CONCRETE (RCC) USED IN KERMAN GHADROUNI DAM

M. Abbasi, M.R. Jamshidi Jam (Iran)

DESIGN AND CONSTRUCTION ADVANTAGES OF HARDFILL SYMMETRICAL DAMS - CASE STUDY: SAFFAF DAM IN EASTERN ALGERIA

T. Guillemot, M. Lino (France)

NEW PROGRESS OF CEMENT-SAND-GRAVEL DAMMING IN CHINA

Wu Xiurong, Chen Zhen Hua, Lin Shengzhu (China)

STUDY ON DESIGN OF MIXING PROPORTION FOR CEMENTED SAND AND GRAVEL (CSG)

Feng Wei, Jia Jinsheng, Ma Fengling (China)

CRACKING PREVENTION OF GUANDI RCC GRAVITY DAM

Li Guoshan, Zhu Haixia, Zhao Yong-Gang, Zhang Lian-Ming (China)

FINAL DESIGN OF A 135-M HIGH RCC DAM IN VENEZUELA

F. Ortega Santos, C. Granell, A. Soriano, A. Andres, A. Bello, A. Hitcher (Germany)

12:45 – 13:15 **LECTURE**

PERFORMANCE OF RCC DAMS

E. Schrader

13:15 – 14:15 **LUNCH**

14:15 – 16:00 **SESSION 5**

PERFORMANCE AND MONITORING

PRESENTATION OF ORAL COMMUNICATIONS

DAM SAFETY MONITORING TO ASSESS VAL DAM BEHAVIOR

R. Gómez López de Munain, J. Merino Vidruero, M. G. de Membrillera Ortuño (Spain)

EVALUATION OF SAFETY AND STRUCTURAL STABILITY OF JEGIN RCC DAM DURING OPERATION PERIOD

M. Esmailnia Omran, H. Mahdiloo Torkamani (Iran)

MONITORING MODEL FOR DISPLACEMENT FIELD OF RCCD

Chen Xudong, Gu Chongshi, Xu Baosong (China)

PROPOSING A STANDARDIZED APPROACH TO STRESS-STRAIN INSTRUMENTATION FOR RCC DAMS

M. Conrad, Q.H.W. Shaw, M.R.H. Dunstan (Switzerland)

QUANTITATIVE MICROCRACK ANALYSIS OF RCC SUFFERED DIFFERENT FREEZING-THAWING DAMAGE DEGREES BY DIP TECHNIQUE

Shuguang Li, Wei Feng, Juntao Tian, Gaixin Chen, Yihui Lu (China)

SEEPAGE ANALYSIS OF GUANGZHAO RCC GRAVITY DAM

Xiaohui Qian, Hao Yang, Lin Luo (China)

THE SUMMARY OF SAFETY MONITORING AND OPERATION ABOUT RCC GRAVITY DAM IN CHINA

Du Xiaokai, Zhao Quansheng, Dang Lincai (China)

THE TENSILE STRENGTH OF RCC FOR DAMS

T.P. Dolen, M.R.H. Dunstan (United States)

THERMAL INDUCED CRACKING PERFORMANCE OF RCC DAMS

K.D. Hansen, B.A. Forbes (United States)

RCC DAM WATER-PROOFING BY MEANS OF HIGH PRESSURE POLYMER INJECTIONS COMPARED TO WATER-PROOF MEMBRANES

A. Gonzalo (Spain)

16:00 – 16:30 COFFEE BREAK

16:30 – 18:00 SESSION 6

OTHER APPLICATIONS OF RCC

PRESENTATION OF ORAL COMMUNICATIONS

RCC USE IN COFFERDAMS

K.D. Hansen, D.L. Johnson (United States)

LESSON LEARNED – MORE THAN 100 RCC OVERTOPPING SPILLWAYS IN THE UNITED STATES

R.P. Bass, T. Fitzgerald, K.D. Hansen (United States)

SOME KEY EXPERIENCES ON THE RCC COFFERDAM CONSTRUCTION OF THE THREE GORGES PROJECT

Chen Xianming, Li Jinghua, Xiong Jihong (China)

RCC IN SMALL PROJECTS

L. Pinilla B. (Chile)

HYDRAULIC SCALE MODEL OF A 50 METERS HIGH STEPPED SPILLWAY ON A RCC DAM IN THE SULTANATE OF OMAN

P.E. Loisel, P. Jehanno, C. Guilbaud, S. Al Hadhrami (France)

STEPPED SPILLWAYS WITHOUT SIDEWALLS: SCALE MODEL STUDY

S. Estrella, M. Sánchez-Juny, J. Pomares, J. Dolz, R. Ibáñez de Aldecoa, M. Domínguez, J. Rodríguez, L. Balairón (Spain)

STUDY ON UNDERFLOW ENERGY DISSIPATION TECHNOLOGY OF HIGH RCCD FLOOD DISCHARGE

Peng Wen-ming, Zhang Lian-ming, Zhao Yong-gang, Hu Xiao-hong (China)

THE HIGHEST RCC DAM IN THE LAO P.D.R. -INTRODUCTION OF NAM NGIEP 1 HYDROPOWER PROJECT-

N. Kita, T. Kamachi, M. Asakawa, T. Tada (Afghanistan)

18:00 – 18:30 CLOSING SESSION

AWARDS CEREMONY: INTERNATIONAL MILESTONE PROJECTS

18:30 FAREWELL COCKTAIL