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Meeting report: Summary of ICOLD committee meetings held in Seattle – August 2013

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ICOLD (the International Commission on Large Dams) has some 22 technical committees which write bulletins for the profession on aspects related to their area of technical expertise. The UK has representatives on a number of those committees who contribute to the production of the bulletins. The following reports detail the work of the individual committees.

A. Computational aspects of analysis and design of dams (no UK representative)

This committee is starting to explore the links between risk analysis and numerical modelling. It will summarise the position on modern dynamic analysis requirements.

F. Engineering activities with the planning process for water resonance projects (no UK representative)

This group is to write a bulletin on the planning process including an identification of the benefits, the criteria on which a project should be assessed and how the project should be measured and a paper of the management of engineering activities during implementation in all phases – investigation, preliminary design, detailed design and coordination – best practice.

This group is looking at the European Water Framework Database and similar approaches in other countries.

H. Committee on dam safety (report by UK representative Dr A K Hughes)

The committee is in its first year since re-appointment. It has 36 members and the best statistics for attendance of all committees.

A bulletin on 'Dam safety regulation and legislations' has been assembled from information given by 44 countries. This is to be reviewed by Dr Andy Hughes, translated into French and then it will be available.

A document to act as an informational and educational document concerning risk management of dams has been reviewed by the Committee on Public Awareness and Education – and is now ready to be put on the ICOLD website.

Preparation of guidance on the management of dam safety during all phases of the life cycle of a dam, preceding the operational phase, is under way.

The committee is assembling and collating information on dam failures and accidents. This is a very frustrating task because of the difficulty in collecting information. The efforts are being continued.

Professor Greg Baecher (University of Maryland) gave a presentation on 'Dams as a system and its response to hazards; modelling approach for risk analysis'. This initiated discussions and alternatives to current methodologies on risk analysis for dams.

Two working groups were established: one to write a white paper reviewing current practices of risk assessment and management for dams (the draft document is due to be ready for Bali in 2014) and a second group to address the assessment of consequences of hazard potential resulting from dam failure.

The work is to start with a review of the state of the art and the current practice of consequence modelling around the world.

K. Integrated operation of hydropower stations and reservoirs (no UK representative)

This committee was meeting for the second time. The committee is just starting to gather cases of the integrated operation of hydropower stations and reservoirs. The work will look at the use of hydro-schemes in the regulation and use of water, energy and environmental management.

M. Operation, maintenance and rehabilitation of dams (no UK representative)

A number of bulletins are being progressed.

1. Operation and maintenance guidelines.
2. Underwater work (80% complete) includes an extensive list of case histories.

3. Revision of Bulletin 49a – 'Operation of Hydraulic Structures'. This includes analytical methods, levels of on-site staffing, new systems for gates and spillways, automatic communications, weather and so on.

S. Flood detention for dam safety (Martin Airey)

(Martin Airey could not attend the committee meeting in Seattle.)

The committee reported that

- Calgary (Canada) was hit by a severe flood in June 2013
- Saxony (Germany) suffered severe flooding again in May–June 2013
- Australia – the media played a negative role in reporting the floods of Nov 2010–Jan 2011.

The bulletin 'Flood evaluation for dam safety' is in preparation. So far changes cover the current methods of flood evaluation, new trends dealing with the qualification of the difference between rainfall runoff models and the characteristics of determination and stochastic methods, the selection of the design flood and debris flows.

O. World register of dams and documentation (no UK representative)

In spite of a circular letter very few elements of new information have been received for and from member countries.

Each national committee is to be contacted to offer a contact to facilitate further information for the world register.

(Note: A T Pepper is currently collating data to thoroughly update the UK's entries in the database.)

Q. Dams surveillance (no UK representative)

This was an important new committee approved for the period 2013–2016, to produce a bulletin on 'Dam surveillance – case histories'.

At this time 45 case histories have been obtained from 18 countries. The bulletin will be published in 2015.

U. Dams and river basin management (no UK representative)

This committee is looking at multi-purpose dams and is assembling case studies looking at the following

- social issues, benefits, issues with indigenous people
- how dams interact with basin conditions
- river basin and river management plans
- cross cutting issues and trans-boundary conditions
- water use frameworks and water management plans.
- lime stabilisation of clay materials
- experience of CMD under rock and non-rock foundations.

Z. Capacity building for dams (no UK representative)

This committee is chaired by the president of ICOLD, and covers a number of training programmes that are underway

- Turkey: In operation for the last 3 years
- Morocco: Completed – but in French and participants have difficult paying
- China: Four workshops and technical tours and support for Africans who pay to go to China but when there the training is free
- Iran: Has offered to transfer technical knowledge
- Spain: Has a 1-year MSc.

The Africa 2013 Conference in Addis Ababa was successful. The committee organised sponsorship for a number of African members. A workshop was held in which Dr Andy Hughes participated which included aspects of

- capacity building – needs and challenges
- recognising that capacity building is a business initiative
- appropriate skills and abilities are needed to ensure sustainability
- the empowerment through the requisite tools and capacity to ensure sustainability
- integration of cultural heritage
- stakeholder participation
- dissemination of knowledge
- legislation, policies and politics.

Capacity building should be seen as an investment.

XX. Young engineers' forum (no UK representative)

Young engineers are considered to be less than 40 years of age. There were Young Engineers' groups in Iran, Korea and Australia in 2012. Eight more have formed and four more are either in the process of being formed or are interested in forming a group.

The 'web-groups' are http://groups.yahoo.com/neo/groups/yef-icold/info?tab=s and www.linked.com (YEF-ICOLD).

Two awards were presented at Seattle – for the best paper and the best poster by a young professional.

South Africa (SANCOLD) must now have two members on their committee who are under the age of 35 years. They have 35 young members to date and have a Young Engineers' paper competition and a social evening for young engineers.

Russia has 65 members; Japan was formed last year. Portugal is forming a group. France has a group and has a 'dam day' each year.

There were 130 young professionals (< 35 years old) out of 1400 delegates at the conference.

Cemented material dams (CMD) (no UK representative)

This is an initiative from China and a first bulletin covering general concepts of cemented material dams materials, dam design, dam construction, quality control, supervision, case histories and references is being planned. A database is to be assembled.

The types of dams included in this study include

- faced symmetrical hard fill dams
- cemented sand and gravel dams
- rock-filled concrete dams.