

SANCOLD Conference November 2009

The SANCOLD Biennial Conference has come and gone and feedback received showed that it was a great success. Special thanks are extended to Prof Gerrit Basson and his team of helpers from the University of Stellenbosch for all of their hard work in organising the event. Delegate registration was 169 and 8 accompanying persons. The setting at the Alpine Heath Drakensberg Resort was idyllic. Several delegates stayed on after the Conference to enjoy the activities in the area. All photographs below are by Paul Roberts.



Alpine Heath Drakensberg Resort

The Conference topic of Sustainable Development of Dams in Southern Africa raised great interest among the dam community including seven international delegates from Botswana, Mozambique, Namibia, Swaziland and Zambia. One of SANCOLD's objectives is to engage with other African countries and the Conference somewhat met this objective. The 42 Conference papers were all subjected to a peer review and all but two were presented during the Conference. Adequate time was allowed for questions and comments which were lively and of interest. All of the visual presentations were captured on CD and given to the delegates at the end of the event. A limited number of copies of the 451 page Conference proceedings containing the CD of the PowerPoint presentations is available for sale at R450 each excluding postage. Please send your request for purchase to the SANCOLD Secretary. The Conference also included an Exhibition where a number of organisations had displays. Three CPD credits were approved for attendance.

The Chairperson opened the Conference and emphasised the historic nature of the event as it represented the first time that members of the SANCOLD Management Committee would be elected democratically. Chris Oosthuizen of the Department of Water Affairs delivered the first keynote address on the topic of risk assessment of dams. Chris questioned the way forward regarding dam safety and emphasised that the risk assessment approach developed in South Africa some 25 years ago needed review and revision. Frans Louwinger of Eskom delivered the second keynote address on the role of pumped storage and an update of the Ingula Pumped Storage Scheme. The Ingula Scheme was visited by the delegates and accompanying persons the next day and is reported on below. The presentation was also particularly interesting from the point of view of the current energy problems as the various supply and demand management activities to overcome the shortfall in energy provision were described. Eskom's five-year capital programme amounts to some R385 billion. The main supply options will be coal fired thermal stations and nuclear power as well as an acceleration of energy from renewable sources. The topics of the Conference covered a wide range of subjects such as dam safety, hydroelectric power, risk assessment, water resources management, technical design and construction issues, environmental and social issues, geodetics, roller compacted concrete, hydraulics and mathematical modelling. Several presentations related directly to the Ingula Pumped Storage Scheme which made the site visit more meaningful.

Some impressions formed during the Conference are:

- It was pleasing to observe the active participation of young women and men which bodes well for our industry and SANCOLD.
- Computational Fluid Dynamics (CFD) has made significant progress over time and offers many benefits.
- Roller Compacted Concrete (RCC) technology continues to develop as an economical method of dam construction.
- The SANCOLD Conference at the rather remote venue fulfilled a networking need as there were ample opportunities during the various breaks and during the field visit for this activity.



Chairperson Rob Williamson opening the Conference



Networking at a tea break

SANCOLD Annual Meeting and Management Committee Election

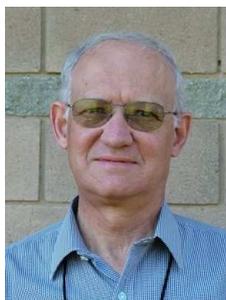
The first SANCOLD Annual Meeting was held on 4 November 2009 and was attended by 85 persons including 25 observers. The draft minutes of the meeting are attached and will be posted on the SANCOLD website. Chairperson Rob Williamson presented the Annual Report 2009 which is also attached and will be placed on the website. The election was closely contended and the following persons were elected to fill the three vacant positions on the Management Committee for a three year term of office: Danie Badenhorst, Willie Croucamp and Quentin Shaw. Our congratulations are extended to these new Committee members. Short biographical detail of the three new MC members is given below.

Danie Badenhorst



Danie is the Technical Director (Dams) of BKS Consulting Engineers. His experience covers dam engineering services for 11 years with DWAF and 22 years with BKS. He joined BKS in 1987 after filling the post as Chief Engineer: Dam Safety Office. Danie serves on the ICOLD Committee on Small Dams and has been a co-opted member of the SANCOLD MC since 2005.

Willie Croucamp



Willie has spent some 43 years with the Department of Water Affairs and has been closely associated with dam safety and large infrastructure development. He served on SANCOLD for 20 years and on several ICOLD Technical Committees which produced bulletins on Seismicity and Dam Design as well as on cost of Dams. He was involved in the post World Commission on Dams Report activities.

Quentin Shaw



Quentin is a Director with ARQ Consulting Engineers and has worked exclusively in dams and hydropower during his 26 year career, specialising in roller compacted concrete. He has worked on dams up to 280m in height in 20 countries. He has participated in five ICOLD Congresses and is a regular contributor at dam design courses presented by SANCOLD.

The SANCOLD Management Committee will be meeting in mid-February 2010 at which time the new Chairperson and Treasurer will be elected. In addition the Management Committee will consider the need to co-opt other persons to ensure balanced representation and expertise.

Site visit to the Ingula Pumped Storage Scheme

Eskom is currently developing the 1332 MW Ingula Pumped Storage Scheme in the Drakensberg Escarpment near Ladysmith. The scheme consists of an upper concrete faced rockfill dam (Bedford Dam) that is connected to reversible pump/turbines via duplicate headrace tunnels, surge shafts, inclined pressure shafts and penstocks. The pump/turbines are connected to a lower dam (Bramhoek Dam) via draft tubes and a single tailrace tunnel. Total tunnel length of the project is about 7 km. Much of the construction commenced in September 2008 and commissioning of the first unit is envisaged early in 2013 and the fourth and final unit towards the end of 2013. The tour focussed on the two dams. The elevation difference between the two dams is 470 m. The project will have a full generating period of 16 hours.



View from upper to lower works

High winds on the escarpment made the wearing of safety helmets rather difficult!

The Bedford Dam (upper reservoir) is a concrete faced rockfill dam with a height of 41 m and length of 773 m. The rockfill volume will amount to 982 000m³. The gross storage capacity is 22 million m³. The upper reservoir contains highly sensitive wetlands and environmental and social aspects receive a lot of attention as elaborated in the Conference presentations. Archaeological and palaeontological finds of importance were discovered during the course of excavations and will be housed in museums and in a visitors centre to be located on site. The Dam is still in the early stages of construction shown in the photograph below.



Bedford Dam under construction

Note the plinth for the concrete facing slab, rockfill and the trial kerbing on the cofferdam.

The Bramhoek Dam (lower dam) is a roller compacted concrete dam with a height of 39 m, crest length of 335 m and total concrete volume (conventional and RCC) of 102 000 m³. The upstream and downstream faces of the dam are composed of grout enriched roller compacted concrete. The gross storage capacity of the reservoir is 26 million m³. Both dams include substantial outlets for the release of environmental flows. The timely partial completion of the Bramhoek Dam next year is essential in order to commence water storage as no water may be abstracted from the upper river for environmental reasons.



Bramhoek Dam under construction

The high outlet block (almost at full dam height) was constructed in conventional concrete due to the complex internal features such as pipes.

The tailrace tunnel in the lower works is 2.3 km long and has a diameter of 9.4 m. A 500 m channel in the reservoir of the Bramhoek Dam completes the lower waterway. The peak flow in the system will be 340 m³/s.



Outlet channel

ICOLD Congress 2009: CPD Credit

SANCOLD applied to ECSA for CPD credits for attendance of the May 2009 ICOLD Congress in Brazil. I am pleased to report that ECSA has approved that 5 credits be awarded. The approval number is ECSA09/0312. The information will be placed on the ECSA website.

ICOLD Central Office, Paris

We have been informed that the ICOLD Central Office in Paris, France has changed its address. The new offices are at 61 Avenue Kleber, 75016 PARIS.

Choice of Technical Questions for the 24th ICOLD Congress in 2012

The ICOLD Central Office has requested National Committees to submit proposals for the Technical Questions for the next Congress to be held in Kyoto, Japan in 2012. If any SANCOLD members have any proposals, please send them to the SANCOLD Secretary before **15 December 2009**. A short description not exceeding 500 words is required. The proposed topics should meet the present concerns of the dam industry and deal with a specific and clearly defined topic. The Technical Questions will be selected from the various proposals during the forthcoming ICOLD Executive Meeting in Hanoi (Vietnam) on 26 May 2010.

78th ICOLD Annual Meeting

The 78th ICOLD Annual Meeting and Executive Meeting will be held from 23 to 26 May 2010 in Hanoi, Vietnam. A one-day International Symposium will be held on the topic of Dams and Sustainable Water Resources Development. Further detail on www.vncold.vn/ICOLD2010. The website has been updated and the meeting promises to be of great interest.

New Regulations relating to the Safety of Dams: Reminder

The Minister of Water and Environmental Affairs intends to make new Regulations relating to the Safety of Dams under section 123(1) of the National Water Act, 1998 (Act No. 36 of 1998). The proposed Dam Safety Regulations were published for public review in Government Notice No.890 and 891 on 01 September 2009. Interested parties are invited to submit written comments in connection with the proposed Regulations before **30 November 2009**. Detail was provided in SANCOLD News and an appeal was made in that Newsletter and at the SANCOLD Conference for comments. Please send your comments to the Secretary: SANCOLD before **25 November 2009**.

Contact details: Reminder

Members are requested to inform the Secretariat of any changes in contact details and especially a change in e-mail address.

Features in the next SANCOLD News

SANCOLD highlights of 2009 and major objectives for 2010.

Regards

Paul Roberts

secretary@sancold.org.za

www.sancold.org.za

Attachments: Minutes of AGM 2009, SANCOLD Annual Report 2009