WTC2014 training session 'Tunnels for Energy'
09-10 May 2014, Bourbon Cataratas Convention & SPA Resort
Iguassu Falls, Parana State – Brazil

Objective : to present the state of art of energy tunnels design & construction. The course will highlight the theoretical & practical aspects of the wide applications on energy tunnels.

Tentative Programme

Friday 09 May 2014 – Session 1 : Basic Concepts of Rock Tunnels & Hydro Schemes

08.30 : Site investigations for rock tunnels – H. Parker
09.20 : Geotechnical & design aspects of rock tunnels – R. Galler
10.10 : Break
10.40 : Pressure design in unlined tunnels & shafts – E. Grøv
11.30 : Design criteria of pressure tunnels – J.M. Franco
12.20 : Discussion

Session 2 : Pressure Tunnels, Shafts & Caverns

14.00 : Construction experience on long & steep inclined pressure tunnels – A. Wilson
14.50 : Construction of shafts – J.Yan
15.40 : Break
16.10 : Case study on mechanised – Rock tunnelling - Robbins - L. Home
16.35 : Case study on mechanised – Rock tunnelling : Mechanized Excavation for Hydropower Projects - Herrenknecht – K. Bäppler
17.00 : Conventional excavation of rock tunnels : Equipment & Technology - Atlas Copco - J. Jonsson
17.20 : Conventional excavation of rock tunnels : Equipment & Technology : Modern drill & blast rock excavation in hydropower projects- Sandvik - A. Laitinen
17.40 : Conventional excavation of rock tunnels : Equipment & Technology : Conventional Tunneling: Innovative Support & Utility Equipment- Normet - M. Rispin
18.00 : Discussion

Saturday 10 May 2014 :

08.30 : Cavern conception, modelling & design – T. Celestino

Saturday 10 May 2014 – Session 3 : Pressure tunnels & tunnels for hydrocarbons

09.20 : Case study 1 – Niagara Falls pressure tunnels – K. Grossauer
10.10 : Break
10.40 : Lessons learned from the Design, Construction & Operation of Hydropower tunnels – D. Brox
11.20 : Case study on ground improvement of rock tunnels & caverns : Hydropower Ground Consolidation - BASF – M. Ross
11.35 : Case study on ground improvement of rock tunnels & caverns : Improvement of rock tunnel in the Alps – MAPEI – D. Michelis
11.50 : Case study on ground improvement of rock tunnels & caverns : SIKA
12.05 : Discussion

Session 4 : Caverns & Storage

14.00 : Case histories & lessons learned from hydro power caverns – E. Broch
14.50 : Alternative underground energy production & storage (geothermal tunnels & compressed air storage cavern) – F. Amberg – V. Wetzig
15.40 : Break
16.10 : Storage caverns in salt formations – A. Maia
17.00 : Discussion

Update : 28.04.2014