Training session 'Planning & Design in Conventional Tunnelling'

17 – 18 October 2016 Thimphu – Bhutan

Venue: Namgay Heritage - Thimphu

Objective: To provide planning, design and construction elements to young professionals related to the best practice of tunnel design.

Programme

Monday 17 October 2016

Session 1: Introduction and overview on Tunnel Design

08.30 – 09.00: Registration of Participants

09.00 – 09.15: Welcome and opening: ITA and country representatives (Director (Projects)/Chief Guest)

09.15 – 09.45: Public authorities and owner roles: planning and general organization (H. Wagner)

09.45 – 10.30: Design philosophy: Design and risk management (H. Wagner)

10.30 – 11.00: Coffee break

11.00 – 11.30: Specificities and stages of tunnel design (Geodata - P. Grasso)

11.30 – 12.00: Geo-investigation and tunnel modeling parameters (Geodata - P. Grasso)

12.00 – 12.30: Questions & Answers

12.30 – 14.00: Lunch

Session 2: Specific aspects of Tunnel Design

14.00 – 14.45: Tunnel alignment and layout planning (E. Humbert)

14.45 – 15.30: Construction methods and aspects affecting design (ventilation etc.) (CETU - E. Humbert)

15.30 – 16.00: Coffee break

16.00 – 16.30: Types of tunnels and caverns (H. Wagner)

16.30 – 17.00: Design and excavation in difficult ground (cavities, fault zones etc.) **(**Geodata **-** P. Grasso)

17.00 – 17.30: Questions & Answers

Tuesday 18 October 2016

Session 3: Conventional Tunneling

09.00 – 09.45: Sequential excavation and design in soft ground and hard rock (H.Wagner)

09.45 – 10.30: Structural and support design (calculation, dimensioning, face stability,) (SWS – P. Cucino)

10.30 – 11.00: Coffee break

11.00 – 11.30: Work site organization in tunnel construction (Eiffage – A.Poloni)

11.30 – 12.00: Instrumentation and monitoring for conventional tunneling (Eiffage – A.Poloni)

12.00 – 12.30: Questions & Answers

12.30 – 14.00: Lunch

Session 4: Case Studies in Conventional Tunneling

14.00 – 14.45: Case study 1: Example of drill and blast design and construction (Eiffage – L. Thevenot)

14.45 – 15.30: Case study 2: Design example of Tunnels for Hydropower in Alpine regions (SWS – P.Mazzalai)

15.30 – 16.00: Coffee break

16.00 – 16.30: Numerical analysis for design of tunnels (Settle, FLAC3D, Phase 2, etc…) (E. Humbert)

16.30 – 17.00: Mechanized versus conventional tunneling: Factors affecting its selection (geology, cost, work site, transportation, expertise, time, etc…) (Geodata - P. Grasso)

17.00 – 17.30: Questions & Closing remarks

17.30 – 18.00: Short address by Chief Guest & award of certificate (Chief Guest)