Niagara Tunnel Project

Ernst Gschnitzer
Project Manager, STRABAG Inc.

Doug Harding
Vice President, The Robbins Company

Abstract:
The Niagara Tunnel Project (NTP) is a 10.4 km (6.5 mi) long, 14.4 m (47.4 ft) bored tunnel that will run under the City of Niagara Falls from the Upper Niagara River to the Sir Adam Beck Power Station. The completed project will enhance the capacity of the Sir Adam Beck Power Station by adding 500 m³ (17,657 cu ft) of water per second through the tunnel. This paper describes the project in which the world’s largest hard rock TBM at 14.4 m (47.4 ft) in diameter is being used to excavate the tunnel. Features of the project include the use of a High Performance (HP) Main Beam TBM, state-of-the-art ground support and tunnel logistics systems. A continuous conveyor is used for muck transport from the TBM to the disposal area. The paper will also discuss the optimization of the TBM system as the tunnel advances through the varying geology.

Keywords: tunnel advance rates; ground support systems and backup systems; STRABAG; insitu lining; rock drills; shotcrete robot; much haulage; non-abrasive geology; Sir Adam Beck Power Station.