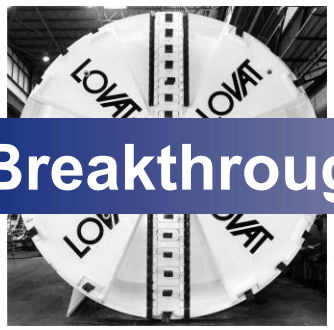

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Acceptance of TBM for OAO Mosmetrostroy – Moscow Metro Escalator Tunnels, Russia

OAO Mosmetrostroy has accepted the LOVAT RME430SE Series 23400 Earth Pressure Balance Tunnel Boring Machine [TBM] for delivery, upon successful completion of testing performed by Mosmetrostroy specialists Vladimir Bogdanov, Mikhail Maslov, Sergey Matrosov, Alexander Shirokov, and Evgeny Sokolov.

The 11 meter diameter mixed face TBM, named “Victoria”, will be used in the construction of access tunnels for escalators on the Moscow Metro System. The project requires the TBM to be driven on a 30 degree decline, making this the first large diameter TBM constructed for operation on a slope of this magnitude.

A number of specific challenges were encountered in designing the TBM. A high density Muck Pump was adopted as the means of muck extraction fed by a two stage Screw Conveyor equipped with dual independent drives. Consideration was given to ensuring the safety of personnel working within the TBM with respect to segment handling and delivery of supplies. Once the TBM arrives at the end of its drive, it can be disassembled from within the tunnel and transported back up. LOVAT has designed and supplied all the handling systems for this operation.

Geology along the tunnel alignment is anticipated to consist of carbonate rocks (dolomite and limestone) and soils including clay, marl, loam and loamy sand. The mixed ground conditions are expected along the majority of the tunnel drive. The entire tunnel alignment is located below the groundwater table, which consists of three differing aquifers of varying elevations above the tunnel invert. Maximum water and EPB pressure is anticipated at up to 4.0 bar.

The TBM is now being prepared for shipment to the jobsite in Russia, with tunnel excavation expected to commence in early 2008.