THE ASCE PITTSBURGH SECTION
GEO-INSTITUTE CHAPTER PRESENTS

October 24, 2018 – Dinner Meeting

Risk Management in Deep Foundations Construction: Development and Implementation of the Repair Methods to Restore Structural Integrity of Drilled Shafts; A Contractor/Owner/Design Engineer Partnership.

Presented By: Alexandre Bredikhin, PE; Risk Manager, USACE-LRP

Construction progress on the $750M lock and dam reconstruction project on the Monongahela River in southwest PA was derailed by discovery of large deficiencies (cavities) in the 6.5-7-ft dia. drilled shafts serving as foundations for a newly-constructed lock wall in the middle of the river. The cavities were located over 50' below the top of the shafts and ranged in thickness from several inches to 2-plus feet. The project could not proceed on-schedule, and the federal funding was jeopardized as well. An emergency team, comprising representatives from the contractor, the Government, and structural design consultants, was formed to evaluate the extent of the problem, to develop a solution, and to implement it in the field, with proper QA/QC. An innovative triple-jet cleaning system was utilized to free the anomalies from organic debris (laitance), and remote underwater cameras were used to evaluate the extent and geometry of each anomaly, as well as to provide QA/QC. A very aggressive schedule was employed to minimize construction delays. As a result, all 86 drilled shafts were successfully repaired. The presentation will discuss the shortcomings of the original construction that led to formation of the anomalies, the exploration efforts to quantify the extent of the issue, the rehabilitation approach and management, the extensive QA/QC effort, and the resulting success, as well as the lessons learned.

Alex has received his BS degree in Engineering Geology from Moscow State University, his MSCE degree from Utah State University, and completed his PhD coursework at the University of Tennessee focusing on Rock Slope Stability Modeling. He then worked for various Engineering Consultants in North Carolina, Missouri, Wisconsin, Iowa, and Illinois for 12 years, and then for ODOT District 4 (in Akron) as a Geotechnical Engineer for 7 years. He is currently the Risk Megaproject Manager for the US Army Corps of Engineers in Pittsburgh, PA, where he also teaches classes at Carnegie Mellon University as an adjunct professor. He also consults independently for shale oil and gas industry, mainly on slope stability and abandoned mine remediation issues.He is a registered engineer in PA, OH, WV, and WI. Outside of work, he enjoys boy scouting with his 10 year old and playing balalaika in his Russian church band.

DATE: Wednesday October 24, 2018

Place: Cefalos
428 Washington Ave,
Carnegie, PA 15106

Time:
6:00 PM – 7:00PM Socializing and Cash Bar
7:00 PM – 8:00PM Dinner
8:00 PM – 9:00PM Presentation

Reservations received on or before 10/15/18:
$25 ASCE Pittsburgh Section Members / Government Employee
$35 Non-members

Reservations received from 10/15 - 10/19/18:
$35 ASCE Pittsburgh Section Members / Government Employee
$45 Non-members
$10 to Students

PLEASE RSVP by contacting Mrs. Maria Jaime at mjaime@agesinc.com by registering online at http://www.asce-pgh.org/ Online registration is highly encouraged and payments can be made with credit card. Only cash or checks will be accepted at the door.