

Virginia Tech
Center for Geotechnical Practice and Research
Annual Lecture Program

Thursday, March 6, 2014

Alumni Assembly Hall
Inn at Virginia Tech and Skelton Conference Center
Blacksburg, Virginia



8:00-8:45

Alan F. Rauch P.E. PhD *Stantec*

“Closure of the Failed Coal Ash Impoundment at TVA’s Kingston Plant”

In 2008, a large impoundment of coal ash failed at TVA’s Kingston power plant. The site recovery and closure project is now nearing completion. Some of the 5.4 million cubic yards of released ash was removed to an off-site landfill. The rest is being stacked back inside the old footprint. A key project feature is a stabilized perimeter, consisting of subsurface slurry walls that were designed to contain the ash if it liquefies in an earthquake. This presentation will focus on the many engineering challenges, including the closure plan, design analyses, project specifications, and on-going construction.

9:00-9:45

Rob Werner, P.E. *Ardaman & Associates*

“I-20 Mississippi River Bridge in Vicksburg, Mississippi”

During a May 2001 inspection of the I-20 Mississippi River Bridge in Vicksburg, Mississippi, it was recognized that significant westward movement of the top of the two eastern bridge piers had occurred. In response, the Louisiana Department of Transportation and Development (LADOTD), with the concurrence of the Federal Highway Administration (FHWA) and Mississippi Department of Transportation (MDOT), initiated a study to assess the geotechnical site conditions and institute structural and geotechnical monitoring programs at the site. In 2009, Ardaman & Associates, along with a team of nationally recognized experts, were retained to expand upon the original study and develop alternative long-term stabilization measures.

10:00-10:45

Jennifer Williams, P.E. *URS*

“Rebuilding Ashton Dam through Risk-Based Design”

Ashton Dam, originally built in 1913-1916, is an earth-rockfill dam that had shown signs of deterioration and needed repair. Ashton Dam is a high-hazard hydroelectric facility located on the pristine Henry's Fork River in eastern Idaho. The site is located within miles of the notable Teton Dam failure site and is the only one of four similarly designed structures still standing in the area. PacifiCorp Energy, URS, and the Federal Energy Regulatory Commission (FERC) sought to rebuild the dam while maintaining stringent dam safety and environmental controls. This talk will describe how the team successfully completed the project, overcoming numerous challenges, using a risk-based design approach. This approach represents the currently-increasing trend in dam safety engineering.

Keynote Speaker

11:00-12:00

Dan Brown, PhD, P.E., *Dan Brown and Associates, PC*

“Foundation for Large Bridges”

Large bridges are typically characterized by very high foundation load demands, both axial and lateral, marine construction conditions, and intense quality assurance requirements. Drilled shafts are often of large diameter and great length, and construction of the foundations is inevitably on the critical path for the project schedule. Projects are often constructed with a design-build form of project delivery with the attendant pressures for efficiency in both economy and schedule. Load testing for performance verification poses risks and opportunities. This presentation describes some of these challenges for construction and design of drilled shafts for these types of projects, including a brief summary of several case histories from across North America.

12:00

The lecturers, CGPR members, and Virginia Tech faculty and graduate students are invited to join us for lunch.