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- When:** September 21, 2011, Wednesday
5:45 PM – 6:15 PM Social time/Dinner
6:15 PM Start of Presentation
- Where:** Kentucky Engineering Center
- Topic:** Overview of Potential Failure Modes of four Dams in different Geologic Environments
- Speaker:** Troy O’Neal, Ph.D, P.E.; United States Army Corps of Engineers - Louisville District

When assessing the performance of critical structures, risk is defined as the product of the probability of failure multiplied by the consequences of failure (loss of life and economic damages). The U.S. Army Corps of Engineers Louisville District risk cadres are conducting risk assessments for several projects nationwide. One of the first and key steps in developing a risk assessment “road map” is to perform a facilitated Potential Failure Mode Analysis (PFMA). The performance of the PFMA alone can provide critical insight to the potential performance of a dam. For this presentation, a brief overview of different geologic settings and operational impacts on potential failure modes of four dams across the nation will be discussed. The four dams presented are:

1. Westville Dam (Boston) – Dam built on granite bedrock with deep glacial outwash.
2. Howard Hanson Dam (Seattle) – Dam built into ancient massive landslide.
3. Isabella Dam (Bakersfield) - Dam on alluvial fan with confined aquifer in high seismic zone.
4. Santa Fe Dam (Los Angeles) – “Dry” dam built on alluvial fan in dense population zone in series with other dams. (Operational aspects).

An open discussion will follow the presentation and several published references for risk assessment will be available by external hard drive before the presentation begins for those interested.

Dr. O’Neal began his career in the private sector where he worked on industrial, commercial, and residential projects for seven years. In 1999, he began work for the U.S. Army Corps of Engineers in the Louisville District. During his time at the Louisville District, he has worked on multiple military and civil works projects including the new approach walls construction at Olmsted and he served as instrumentation engineer for construction of a new lock chamber at McAlpine Lock and Dam. Dr. O’Neal worked as the Louisville District Dam Safety Program Manager from 2002-2010, where he oversaw all technical and quality aspects for the Dam Safety Program for 30 dams. During that time, Dr. O’Neal also served as methodology lead for Potential Failure Mode Analysis (PFMA) used in risk assessments, developing the USACE PFMA policy documents and training course. Dr. O’Neal currently serves as the District Subject Matter Expert for Dam Safety, leading two risk cadres. He oversees/facilitates several on-going risk assessments on multiple local and nationwide projects including Isabella Dam, Westville Dam, Union Village, Howard Hanson Dam, and Santa Fe Dam. Dr. O’Neal was a Research Fellow at the University of Louisville where he earned a Ph.D. in Geotechnical Engineering. He is a registered professional engineer in the state of Kentucky.

ANNOUNCEMENTS:

2012 Office Nomination/Election, September 21:

Current Nominees:

Co-Chair: Craig Barnett

Chair: Malcolm Barrett

Secretary: Daniel Gilbert

Treasurer: Adam Hacker

Website Engineer: Paul Cooper

Program Coordinator: OPEN

Next KEGG Meeting:

Due to ORVSS XLII, KEGG will not meet in October. The next meeting will be November 16th: David Deitz – Palmer Engineering

ORVSS XLII: Lessons Learned: Failures and Forensics

October 21, 2011 (Don't Miss the Early Registration Deadline!)

Millennium Hotel – Cincinnati, OH

Website Request:

Please check out the website. You can register for ORVSS, check upcoming events, register for upcoming events, review membership and much more. If you have any comments or suggestions for the website, please utilize the feedback page on the website.

KEGG DUES:

KEGG dues of \$10 are now due for next year. Our dues run from October to October. Send checks payable to KEGG to Daniel Gilbert, Stantec, Inc., 1409 North Forbes Road, Lexington, KY 40511-2050

Ethics Course:

This course satisfied the KY and IN PDH requirements. The workshop was very well received by the first 44 engineers that attended. Door prizes included an autographed basketball and tickets for 8 to Churchill Downs. Stay tuned for more information.