



THE ASCE PITTSBURGH SECTION GEO-INSTITUTE CHAPTER Presents

Remediation of Deep Seated Abutment Movement Nesbitt Dam, Lackawanna County, PA

Presented by: Ms. Cari R. Beenenga, P.E., M.ASCE.

Attendance at this technical presentation qualifies participants for 1.0 PDH

Nesbitt Dam in Lackawanna County, Pennsylvania is owned by Pennsylvania American Water and was constructed in 1908. Nesbitt Dam is a 101-foot tall, 538-foot long composite earth-fill embankment with stone masonry core-wall and a 288-foot long masonry non-overflow and spillway section. Nesbitt Dam is a water supply structure maintaining 3,926 acre-feet of water at normal pool, with a maximum storage capacity of about 5,335 acre-feet at top of dam.

The right abutment adjacent to the earth embankment section of the dam has experienced movement dating back to the 1920s. Measurable movements of surface monuments installed in 1920 and 1947 were recorded from 1920 to 1977. The maximum horizontal movement documented was 13.2 feet at a monument located 420 feet downstream of the dam centerline. Smaller movements were recorded adjacent the dam. In the 1980s, a masonry retaining wall (serving as a separator between earth embankment section and stone masonry section) required repair due to horizontal and vertical movement along the masonry joints. The repair was located 120 feet downstream of the dam centerline. It was unclear at that time if hillside / abutment movement caused the retaining wall failure.

Ms. Beenenga is a Senior Geotechnical Engineer with Gannett Fleming in their Harrisburg office. She is the Geotechnical Project Manager for the Nesbitt Dam Rehabilitation Project and has remained involved with the project through ongoing construction, scheduled for completion in 2013. A Pennsylvania State University graduate with over 23 years experience in geotechnical engineering, Cari is licensed as a Professional Engineer in the states of PA, WV, and VA. At Gannett Fleming, she specializes in the design of dams, levees and foundation engineering. Active in the Central PA Section of ASCE, Cari chairs the Planning Committee for the Central Pennsylvania Geotechnical Conference held every 18 months on Hershey, PA.

DINNER RESERVATIONS ARE REQUIRED PLEASE RSVP BY Friday, March 9, 2012

Date: Thursday March 15, 2012
Time: 6:00 PM Social Hour
7:00 PM Dinner
8:00 PM Presentation

Cost: \$25 for members of the ASCE
Pittsburgh Section
\$35 for Non-members
Free for Student members

Place: Foster's Restaurant
680 Andersen Drive, #10
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