

THE ASCE PITTSBURGH SECTION GEO-INSTITUTE CHAPTER PRESENTS

REHABILITATION OF THE THORN RUN DAM

Presented by: James R. James, P.E.



Attendance at this technical presentation qualifies participants for 1.0 PDH

The Thorn Run Dam was originally constructed circa 1903 in Oakland Township, Butler County, PA. It is an earthen dam with a concrete core wall. Several times in its history, the dam has been modified and upgraded. The dam retains Thorn Run Reservoir, which is part of the primary public drinking water storage system for the City of Butler and surrounding communities.

Several significant problems had affected the dam's performance and safety. Over time, long-term seepage problems had developed. The right side of the downstream dam face remained in an over-steepened condition (as it was originally constructed). The existing primary spillway was significantly undersized for the current Probable Maximum Flood (PMF) criteria.

In 2006, the dam's owner, the Pennsylvania American Water Company (PAWC), made the decision to undertake a major rehabilitation to bring the dam into compliance with current dam safety regulations. Gannett Fleming, Inc. was retained to complete the design and subsequent construction monitoring efforts. This project is part of a Butler area system-wide upgrade for PAWC which included a similar action at the Oneida Lake Dam and the breach and abandonment of the Boydstown Dam. Construction was completed from 2010 to 2012.

This presentation covers the construction phase of the project from start to finish. Specific topics include installation of the dewatering system; construction of temporary cofferdams and water diversion measures; staged demolition of the existing concrete spillway; staged excavations within the dam footprint; construction of the new conventional concrete spillway upgrade; placement of earth fill for the new dam geometry; placement of a temporary earth surcharge to facilitate consolidation of the dam foundation strata; installation of relief wells; placement of the new filter media / drain fill; construction of the new toe drain and relief well outlet systems; reconstruction and modification of the water supply and drain piping; production and placement of the roller compacted concrete (RCC) dam and interceptor channel armoring; installation of the electrical and instrumentation upgrades and modifications; and construction of the upgraded access roadway.

DINNER RESERVATIONS ARE REQUIRED
PLEASE RSVP BY Friday, November 8, 2013

Date: Thurs, November 14, 2013
Time: 6:00 PM Open Bar
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: Gaetano's Restaurant
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Pittsburgh, PA 15216
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