

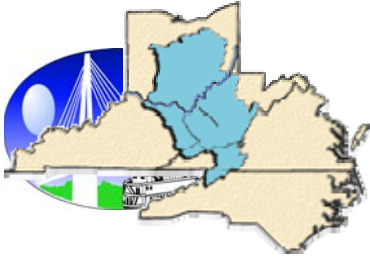


The Bridge



NEWSLETTER OF THE HUNTINGTON POST, S.A.M.E.

www.same.org/huntington



This Month's SAME Meeting 8 April

**Topic: Reliability and Risk Assessment Study
Monongahela River Locks and Dam 3**

Presented by: Robert H. Yauger and James R. James

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April Meeting

**Topic: Reliability and Risk Assessment Study
Monongahela River Locks and Dam 3**

Speakers: Robert H. Yauger and James R. James

Date: Tuesday April 8, 2008

Time: 1130 to 1300

**Location: Cabell County Main Library, 455 9th St., Huntington, WV
25701**

Cost: \$5.00 students \$7.00 members and \$8.00 non-members

**RSVP: Tom MacFarland at: thomas.g.macfarland@usace.army.mil
Office (304) 399-5369**

**Menu: Fried Chicken, Mashed Potatoes, Green Beans, Dessert
and Drinks.**

MONTHLY POST MEETING SCHEDULE

April 8, 2008 – Monthly Meeting

May 13, 2008 – Monthly Meeting

June 10, 2008 – Monthly Meeting

Don't forget to ask Dave Meadows for a PDH certificate if you need one. david.f.meadows@usace.army.mil

Does your firm have a special announcement or major promotion on a SAME member?

If so, contact Tom MacFarland, thomas.g.macfarland@usace.army.mil or (304) 399-5369, and he will include it in the next edition of "THE BRIDGE".



The SOCIETY OF AMERICAN
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News From The President:

My article this month is a little short as we have been in a flood fight in the Muskingum Basin since mid-March and I am still deployed. Our Regional conference is fast approaching so if you haven't had the opportunity to register I would ask you take the time to do so. I'm sure we will have some real time examples of mitigating risk out of this flood fight. From our rapid response to the levee safety issues in the Muskingum, I can tell you our military, civilian, industry partnership in support of National Defense and public safety is strong.

Best regards,

Dana R. Hurst
Colonel, U.S. Army
Post President
Huntington, WV

News:

Huntington Post is a "Distinguished Post" for 2007. The Post was successful on meeting all 4 streamer requirements. Thanks to all who helped bring this honor to our post.

Correction to March Newsletter:

Dr. Bill Pierson had to fill in for Dr. Kopp and provided the opening remarks at Engineering Career Day.

This Month's Speakers:

Robert H. Yauger and James R. James

Robert H. Yauger, Geotechnical Project Manager, 9 years with Gannett Fleming (Pittsburgh Office). -- B.S. in Civil Engineering, Carnegie Mellon University, 1993.

James R. James, Senior Geotechnical Engineer, 13 years with Gannett Fleming (Pittsburgh Office). --M.S. in Civil Engineering, Penn State University, 1991.



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This Month's Presentation:

Reliability and Risk Assessment Study Monongahela River Locks and Dam 3

The Monongahela Locks and Dam 3 at Elizabeth, Pennsylvania is one of nine navigation structures that provide for year-round navigation on the Monongahela River between Pittsburgh, Pennsylvania and Fairmont, West Virginia. The original facility is approximately 100 hundred years old and is currently scheduled for removal in the year 2016. An August, 2005, detailed inspection performed by USACE divers discovered areas of critical deterioration beneath the existing dam structure. It is necessary for the locks and dam to remain operational until major rehabilitation work is completed upriver at the Monongahela Locks and Dam 4 near Charleroi, Pennsylvania. Thus, an evaluation of the reliability of the current facility and the risk associated with maintaining operations into the future is desired.

The United States Army Corps of Engineers, Pittsburgh District (Corps) has retained Gannett Fleming, Inc., of Pittsburgh, Pennsylvania to perform structural and reliability analyses to determine the stability risk assessment of the existing fixed-crest dam founded on timber piles and rock-filled timber cribbing, and also the existing lock walls founded on rock. The structural analyses have been performed through evaluations of representative two-dimensional cross-sections of the locks and dam. The reliability analyses has resulted in a model of the time dependent behavior of the stability of the dam and stilling basin with respect to scour, deterioration of cribbing and subsequent loss of rock infill, and undermining of the stilling basin through the implementation of Monte Carlo simulation methods. The reliability analyses have also modeled the time dependent behavior of the stability of the lock wall monoliths and rock anchors with respect to undermining, deterioration, fatigue, and changing load conditions due to undermining and erosion of foundation rock. Specifically, GF has completed structural and reliability analyses that compare loads and stresses, displacements, pile loads, and concrete stress to limit states for selected structural elements to determine their time dependent behavior to scour, undermining, and relaxation and corrosion of anchors.

At the direction of USACE, Gannett Fleming has also completed an emergency repair design for the existing fixed-crest dam. The emergency repair was developed in response to the critical conditions noted to the existing dam and stilling basin as part of the USACE divers inspection. In particular, the divers noted two critical areas of deterioration where undermining and/or collapse of the rock-filled timber cribbing has raised serious concerns regarding the immediate stability of the dam. The repair design consists of backfilling the undermined and collapsed areas with tremie concrete, and installing sheet piling and new stone scour protection immediately downstream of the stilling basin to prevent continued erosion and provide additional lateral restraint to the dam. The repairs were implemented in the summer and fall of 2006.



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Sustaining Member of the Month

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Founded in 1992, PRIME has emerged as a leader in providing a wide variety of integrated services, including Architectural Design, Bridge and Roadway Design, Civil and Structural Engineering, Construction Services, Geotechnical Engineering and Material Testing. Our professional team serves both the public and private sectors with extensive national and international experience.

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- Structural Modification to existing buildings
- 3D Modeling
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- Subsurface Investigation
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- Soil Compaction Testing
- Soil Testing
- Concrete Testing Asphalt Testing
- Rickenbacker Maintenance Shop



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Sustaining Member of the Month (Cont.)

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- Storm and Sanitary Sewer Rehabilitation
- Water Lines and Water Storage Tanks
- Site Improvements: Parking, Storm Drainage, Sanitary Sewers, Site Access
- Water and Wastewater Pump Stations
- Water and Wastewater Management Plans
- Water and Wastewater Treatment Facilities
- Project Program Management
- Hydraulic and Hydrologic Studies
- Stormwater Management
- Erosion and Sediment Control Design
- Drainage Design

Corporate Office

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Phone: (614) 839-0250
Fax: (614) 839-0251

Our corporate office is located at the Polaris Parkway and I-71, 2 miles north of I-270 (Columbus Outerbelt). From I-71, use exit 121 to Polaris Parkway. Our building is located on the corner of Orion Place and Olde Worthington Road, and we are located on the third floor.

