SWT – SAME Workshop
Tulsa District HSS (Gates & Bulkheads)

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Tulsa District – Civil Design
WHERE WE ARE — U.S. ARMY CORPS OF ENGINEERS

Northwestern Division

South Pacific Division

Southwestern Division

Mississippi Valley Division

Transatlantic Division

Great Lakes & Ohio River Division

North Atlantic Division

Northwest Atlantic Division

Europe District

Other Organizations
Engineer Research and Development Center (7 Labs)
Engineering and Support Center, Huntsville
Army Geospatial Center
USACE Finance Center
USACE Logistics Activity
Marine Design Center
Institute for Water Resources
24th Engineer Battalion

LEGEND
Division Information
Division Information
Division Information
Engineer District
Engineering Construction
Engineer Detachment

BUILDING STRONG®
Engineering Research and Development Centers (ERDC)
Engineering Centers of Expertise (MCX)
Institute for Water Resources
Civil Works & Infrastructure - SWT

• Infrastructure Section
  Dam Safety Program / Levee Safety Program / Bridge Safety Program*
  Annual Inspections (some but not all are lead by assigned Project
  Engineers from this section, others are lead by Operations Personnel) this
  includes the PI&PA programs.

• Civil Works Section
  Civil works design for O&M and M&M generally with assistance or under
  the guidelines of the required MCX (DSPC / HDC / INDC). Districts HSS
  Program is also overseen in this section.
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- June 2014 – Existing Designs are no longer allowed to be replicated without 1st conforming to ETL 1110-2-584.
USACE Requirements

• ER 1110-2-1150
  “Engineering and Design For Civil Works Projects”, 31 Aug 1999

• ER 1110-2-8157
  “Responsibility for Hydraulic Steel Structures”, 15 June 2009

• EM 1110-2-6054
  “Inspection Evaluation and Repair of Hydraulic Steel Structures”, 01 Dec. 2001

• ETL 1110-2-584
  “Design of Hydraulic Steel Structures”, 30 June 2014

http://www.publications.usace.army.mil
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Challenges:

- Projects are aging, District is 75-yrs old. Our projects are beginning to show some age and larger and more complex components are needing to be replaced.

- Large Inventory, 38 Lake Projects / 2,000 HSS Components / 1,528 Buildings / 48 Bridges.

- Changing Conditions: Environmental Cycles / Seismic Activity.

- Resourcing Components: Cast Steel / Semi-Cast / Bronze Alloys / etc.

- Design Standards; USACE and other Code Standards are rapidly changing.

- Changing Contracting Requirements
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Large Inventory, 38 Lake Projects / 2,000 HSS Components / 1,528 Buildings / 48 Bridges.
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Design Standards; USACE and other Code Standards are rapidly changing.
Location of Steel Fabricators – who have built HSS structures for Tulsa District
Examples
Examples
John Redmond Floating Bulkhead

Stats:
50ft x 20.25ft x 7.5ft
Operating Range (1036.5 - 1045.0ft)
Minimum Freeboard (2.0ft)
Minimum Operating Weight (93.5 Tons)
Minimum, operating, Draft (9.75ft)
Tulsa District Project Update

First-ever pintle ball repair successfully completed by Tulsa District at Chouteau Lock 17

The moment of truth as the custom-made pintle ball is moved into place under the dam gate. There were no existing replacement parts available for this work at Chouteau Lock and Dam 17 in Chouteau, Oklahoma, so crews were forced to wait until the actual placement of the part to know if it would fit, which it did.

Work involving the repair of a major component of a lock along the McElroy/River Arkansas Towage Navigation System (MEARS) was recently completed ahead of schedule by the Tulsa District, U.S. Army Corps of Engineers (USACE).

The work involved the removal and replacement of a pintle ball at Lock 17 in Chouteau, Oklahoma. This was the first time such a repair has been performed on a lock on the MEARS. The entire lock was emptied of water; an operation referred to as “de-watering,” so that the dam gate could be lifted for the removal of the pintle.

Impact to commercial operations along the navigation system was kept to a minimum through extensive planning, sparing several months, in an effort to close the lock for three weeks or less. The lock closed August 27 and reopened to direct traffic September 6, with crews scheduled to continue any other required work between trips.

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February 2013
Question everything