Projects Impacting Federal Power
Kansas City District

Southwestern Federal Hydropower Conference
Kansas City, MO

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US Army Corps of Engineers
BUILDING STRONG®

Stockton Water Supply Reallocation

- Contract established with City Utilities of Springfield (CUS) on Oct 1993 for 50,000 ac-ft of storage between elevations 830 and 867 msl.
- CUS is using one-half (25,000 ac-ft) of their allocation and recently submitted a request to begin payment on the remaining 25,000 ac-ft.
- There have been no recent requests/inquiries for water supply reallocation.

Stockton Downstream Endangered Mussels

Pink Mucket

Spectaclecase

Stockton Downstream Endangered Mussels

- Missouri Department of Conservation (MDC) conducted surveys downstream of the plant in 2009 and 2010.
  - Survey results will be available in 2012.
- December 2010 – Mtg was held w/U.S. Fish and Wildlife Service (FWS) and MO Dept of Conservation (MDC)
  - New turbine design does **NOT** require operational changes.
  - Categorical Exclusion from Section 7 Consultation.
- Coordination on-going with FWS and MDC
  - Controlled flows while plant is out of service in 2013 for additional surveys.

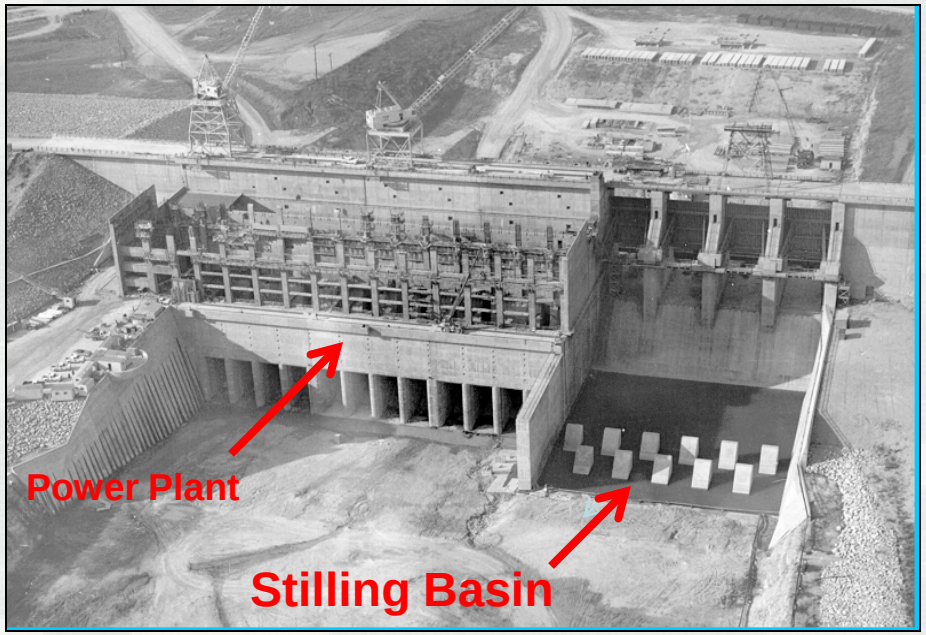
Harry S. Truman
Stilling Basin Repair

Schedule

- Contract Award: 3 Sep 2010
- Contract Completion: 17 June 2011 (on-site work)

Estimated Costs

- Contract: $2.7M
- S&A/EDC: $540K



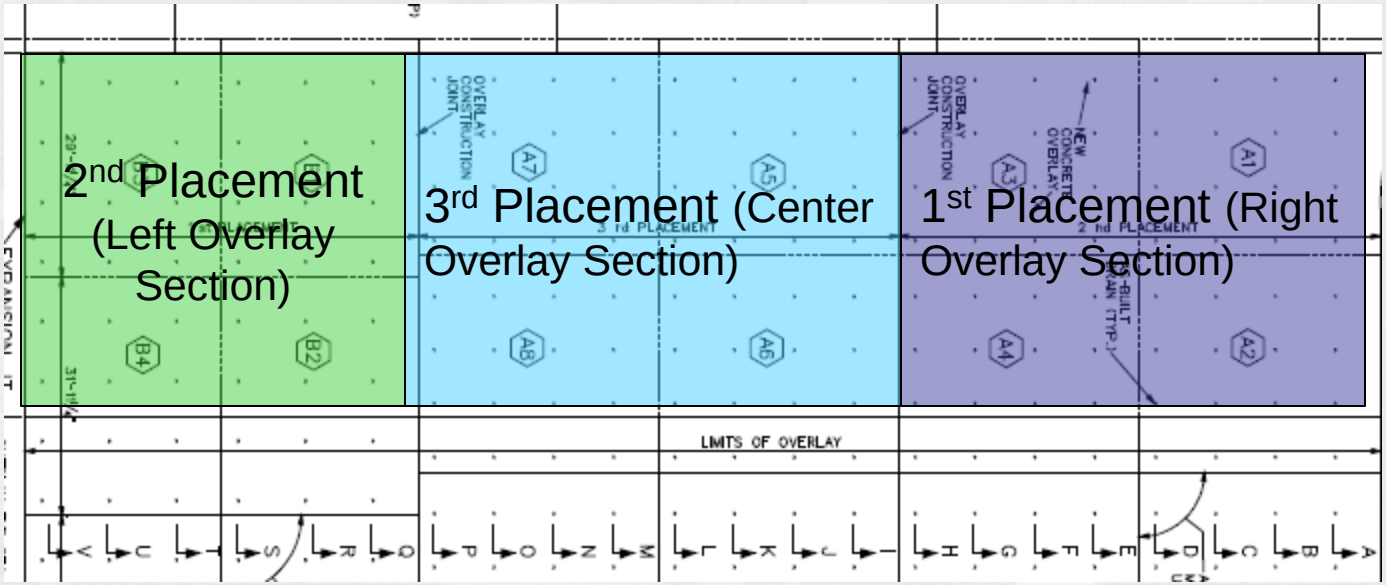
Harry S. Truman Stilling Basin Repair

General Information:

- Full width overlay (Left, Center, and Right Sections)
- 193 – 41 foot anchors placed
- 1,800 cubic yards of concrete poured
- 148 drains drilled
- 78,000 minutes (1,300 hours) of bottom time for divers

Upstream

Flow



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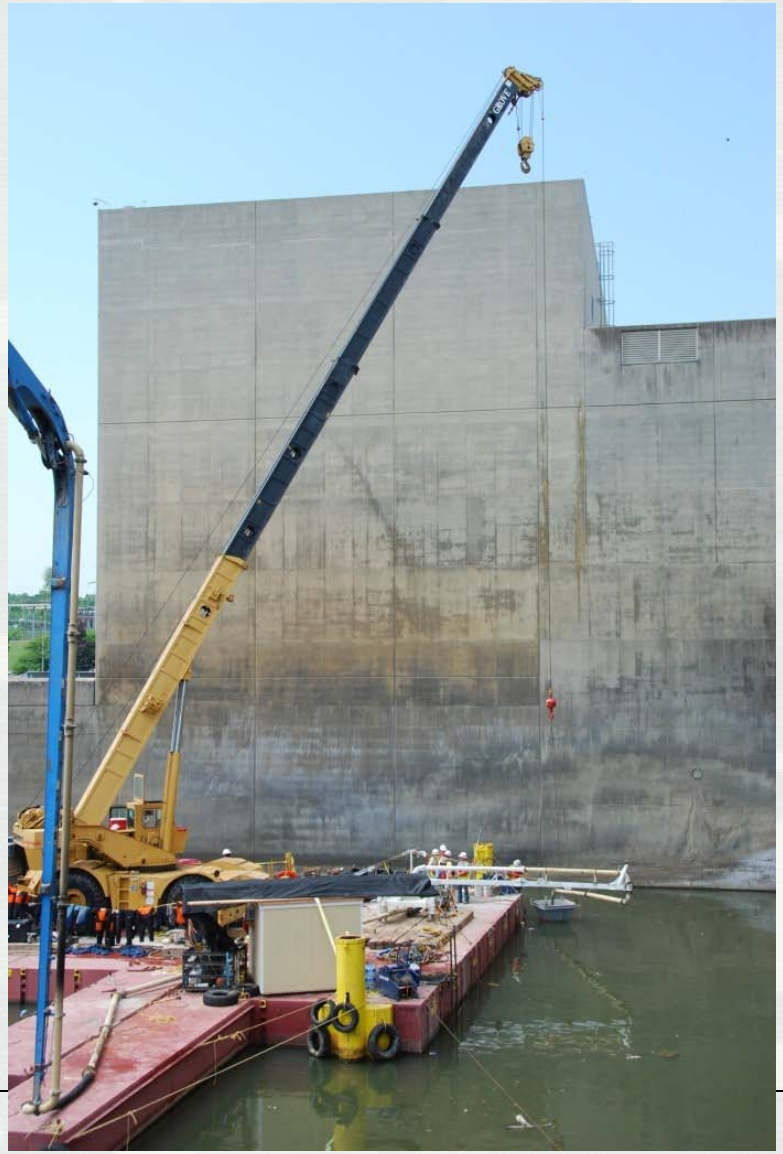

Harry S. Truman Stilling Basin Repair

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Harry S. Truman Pumpback Historical Review/Future Outlook

Plant's Original Design Parameters

- Number of generating units: 6
- Number of pumpback units: 5
- Generation with all 6 units for 7 ½ hours each weekday during the summer months
- Pumping limited to 8 hours on weekdays and 40 hours on weekends with five units during the summer months
- Approximately 4 MWh of pumping energy is required to yield 3 MWh of generating energy

History of Pumpback

- **April 1982:** Pumpback test performed on Units 4 & 5 (1 and 2 hrs respectively).
  - Units performed as designed, however, an estimated 2,000 pounds of fish were killed.
  - Mortalities caused by physical contact with the runner, wicket gates or trash racks; shear forces; and pressure changes.
- Decision was made that pumpback should not be used until the fish kill problem was resolved.
- Contract awarded with Stone and Webster Engineering to develop solutions to the fish kill problem.
  - Numerous alternatives were considered. Only alternative found capable of providing the necessary level of fish protection was angled screens placed in the tailrace in front of the pump intakes.
  - There was economical and biological uncertainties with the angle screen.
  - Study estimated the capital costs for the most feasible alternative would be in the range of $20-$40 million. No estimate of annual O&M costs was made.

History of Pumpback Cont'd

- **Nov 1985:** Corps eliminated all of the studied fish protection alternatives from consideration and recommended that pumpback not be used at Truman until viable option becomes available to prevent unacceptable losses to the Lake of the Ozarks' fish population.
- **1987:** University of Missouri-Rolla completed a study funded by Associated Electric Cooperative, Inc., examining the feasibility of constructing a porous rock dike in the Truman tail water.
  - Study concluded that, while additional testing was needed, such an installation could provide the necessary fish protection. A model test was proposed to confirm the study results, but was never funded.
- **Mar 1990:** Consensus Interim Operating Plan was approved.
  - Maximum of four units operating in the conservation pool (five units are allowed during the winter).
  - No pumping.
  - Five and six unit operation allowed only in accordance with the flood control plan or in power emergencies.
- No further significant effort has been pursued to evaluate the feasibility of pumpback at Truman since 1990.

Future Outlook of Pumpback

- Won't happen until fish mortality and downstream stakeholder (State of MO, Recreational, MDC, etc.) interests are addressed.
- A new study would have to be initiated. Reconnaissance study would need to be completed first to determine if a more detailed feasibility study is warranted. Cost of a recon study would be dependent upon the scope, but could be fairly expensive ($100K - $120K).
- SWPA would need to prepare detailed studies that include a complete evaluation of the operational and rate impacts associated with the proposal.
- Political challenges will make even a feasible solution difficult to implement.
- Settlement for the fish loss during the 1980's pumpback tests would have to be addressed with MDC.

Questions?