

# **East Branch Dam Safety Initiative**



## **STATUS REPORT April 2012**



**US Army Corps  
of Engineers** ®  
Pittsburgh District

# **SUMMARY**

The primary objective of our Dam Safety Program is to maintain public safety by ensuring the dams we own and operate are safe and risks to the public are minimized. East Branch Dam has confirmed dam safety issues related to potential internal erosion similar to the serious internal erosion episode in 1957 that required lowering the lake to make repairs. Based on the results of a risk informed screening of the dam, in February 2008, the Corps began 24-hr staffing at the dam, lowered the lake level and implemented an interim reservoir operations plan as reasonable and prudent measures. This allowed the District to provide immediate and substantial interim risk reduction while limiting negative impacts on project purposes.

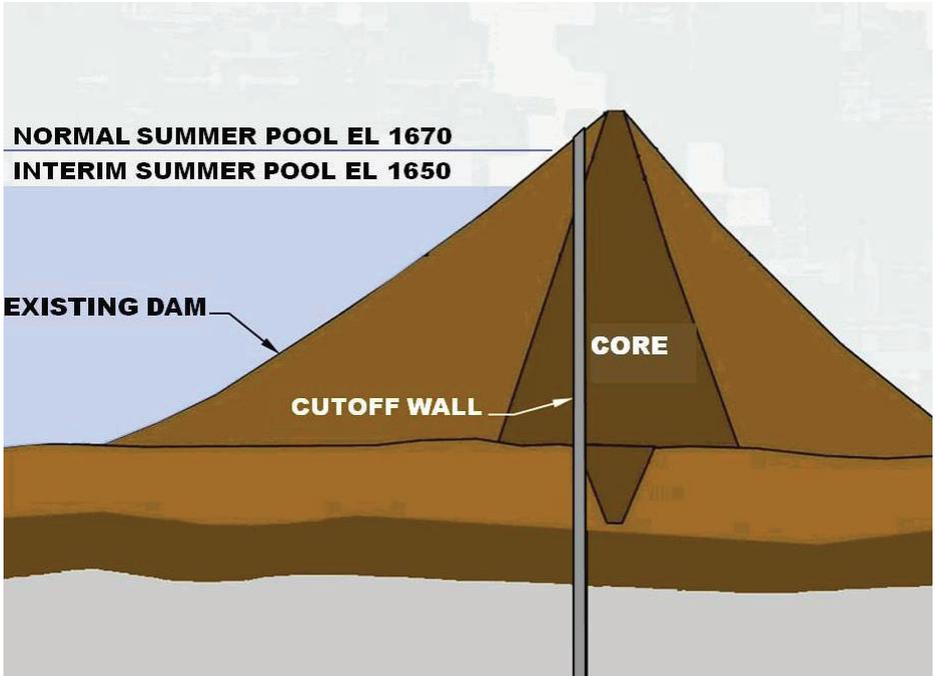
Since 2008, the District has conducted additional explorations and intensive analysis of all relevant information about the dam. This work confirmed that seepage paths exist through and under the dam, generally consistent with known conditions and supports the need to pursue long-term repairs.

A Dam Safety Modification Study was completed and approved by Headquarters, U.S. Army Corps of Engineers in October 2010. The approved long term risk reduction plan for East Branch Dam consists of constructing a concrete cutoff wall within the existing embankment and foundation. The first construction contract for improving the access road to the dam was awarded in September 2011. Field explorations were completed in March 2012 to provide information to design the cutoff wall.

UPDATED

## DAM SAFETY MODIFICATION PROJECT

The Dam Safety Modification Study, approved in October 2010, defines the scope, cost and schedule of the proposed long-term risk reduction plan. The study recommends constructing a full-length, full-depth concrete cutoff wall through the dam to reduce risk and restore the dam to normal operation. The estimated cost of this plan was \$280 million.

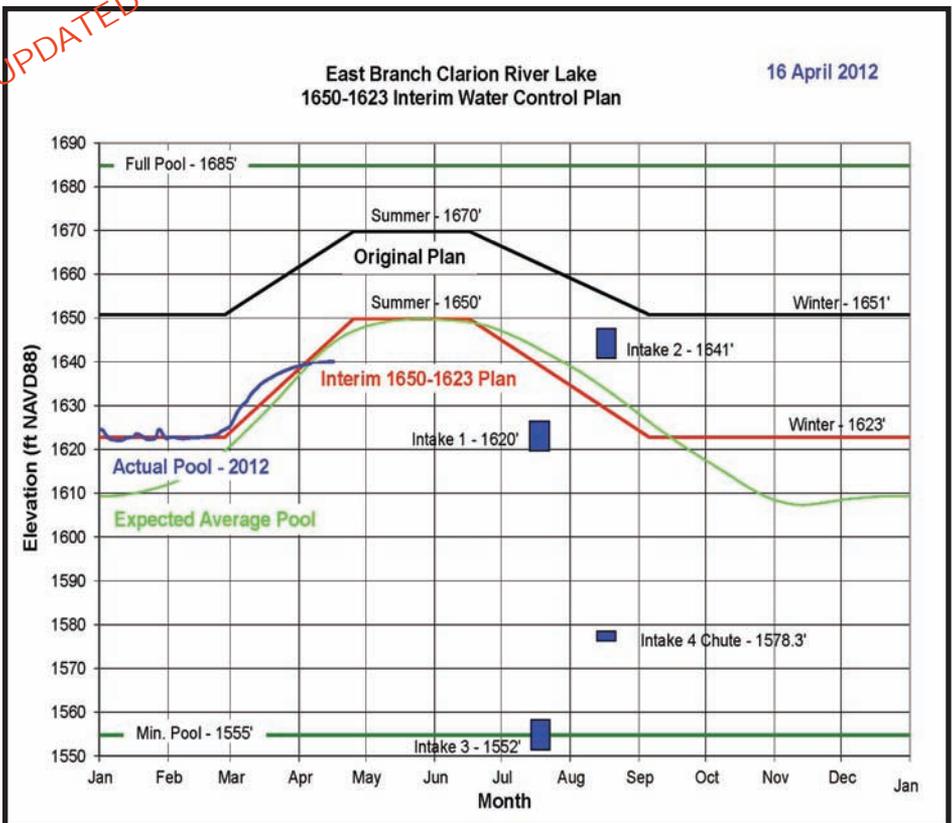


The preconstruction engineering and design phase of the project was initiated in October 2010. The Assistant Secretary of the Army for Civil Works concurred with initiation of construction on Aug. 5, 2011. The site development contract for replacing the access road and preparing the office and material laydown areas was awarded in September 2011 for \$2,902,280. The construction office building contract was advertised in March 2012. A contractor price proposal is forthcoming for installation of new instrumentation to monitor dam conditions during cutoff wall construction. A scope of work is under development to automate a number of existing and new instruments to enhance monitoring during construction. Cutoff wall design is ongoing and contract advertisement is scheduled for January 2013. Completion of the cutoff wall in 2017 is funding dependent.

## RESERVOIR OPERATION

The district is currently operating East Branch Dam and Reservoir under a lowered pool to reduce risk as part of the Dam Safety Initiative. Currently, the district is attempting to fill the lake to the interim summer pool elevation of 1650, which is 20 feet lower than normal target summer pool. The success of meeting lake levels is dependent on the amount of precipitation within the Clarion River Basin. The dam is continuing to provide additional water to maintain downstream water quality and temperature. As of April 16, East Branch Lake is near 1640 feet. To obtain the latest lake level and outflow information, please visit: [wmw.lrp.usace.army.mil/current/forecast.html](http://wmw.lrp.usace.army.mil/current/forecast.html)

An annual review of how the Corps will operate the reservoir pool was conducted in March 2012. The district recommended to maintain its current interim water control plan.



## **INTERIM RISK REDUCTION MEASURES**

- Cross-training of Corps personnel from other lake projects was completed in March 2008.
- The lake has been staffed 24 hours a day, seven days a week since March 2008.
- Maintenance of the existing sluice gates and machinery was completed in 2008 to improve reliability.
- Control Tower Number 4 intake extension was installed in 2008.
- On-site equipment and supplies were delivered in 2008.
- Lighting was installed in 2009 to enhance monitoring and surveillance.
- Additional piezometers and two inclinometers were installed in 2010.
- Equipment was installed on the two weirs in 2011 to provide automated gage readings.
- The 2012 annual dam safety refresher training was completed in February.

## **NEPA AND WATER QUALITY**

The Corps:

- Completed an Environmental Assessment and signed a Finding of No Significant Impact (FONSI) document, in compliance with the National Environmental Policy Act (NEPA), to assess environmental, cultural, and economic impacts related to implementation of the East Branch Dam interim water control plan and the Dam Safety Study's risk reduction alternatives.

- Completed an environmental assessment and signed a FONSI addressing the Dam Safety Study's risk reduction alternatives and proposed long-term risk reduction plan.

- Continues to monitor real-time water temperature at the dam outflow from March through November. (Water temperature information available on the Dam Outflow Information link at [www.lrp.usace.army.mil/rec/lakes/eastbran.htm](http://www.lrp.usace.army.mil/rec/lakes/eastbran.htm).)

- Continues to monitor real-time lake water temperature profile at a location near the dam intake tower.

- Conducts water quality analyses at the dam outflow twice monthly.

- Conducts East Branch Clarion River Lake aquatic ecology survey from May through October.



One of East Branch Dam's authorized purposes is to provide additional water flows to maintain downstream water quality to offset industrial and sanitary discharges. The Corps does this by opening the control tower's water intakes at different levels and temperature elevations. This water mixes in the outflow to achieve the required volume and temperature. To ensure this requirement was met during lower water levels, the Corps fabricated an extension that allows intake water from an additional lower elevation where cool water is available.

UPDATED

## TO DO LIST

### 2008

- Received Willowstick Seepage Flow Path Mapping Final Report
- Control Tower Maintenance Work
- Number 4 Intake Extension Installation

### 2009

- Preliminary Risk Reduction Measures Identified
- Installation of Lighting and Storage Bins
- Finding of No Significant Impact signed for Interim Water Control Plans Environmental Assessment
- Completed Extension of the Federal Boat Launch Ramp
- Conducted Table-Top Dam Safety Exercise with Emergency Responders

### 2010

- Inundation Mapping Complete
- Finding of No Significant Impact for the Long-Term Risk Reduction Measure signed
- Independent External Peer Review of Dam Safety Modification Study
- Dam Safety Modification Study Approved
- Initiate Project Design Phase

### 2011

- Complete site development contract plans for access road improvements and site preparation
- Receive Assistant Secretary of the Army for Civil Works concurrence for construction
- Award geotechnical investigations contract for cutoff wall design
- Award site development construction contract

### 2012

- Award contract for Independent External Peer Review of design phase
- Geotechnical investigations for cutoff wall design complete
- Award office building contract
- Award contract to install instrumentation to monitor the embankment during construction
- Award contract to automate instrumentation

### 2013

- Advertise cutoff wall contract
- Award cutoff wall contract



**Geotechnical investigations to support cutoff wall design were completed from October 2011 through March 2012.**

**For more information, please contact the following:**

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**The East Branch Dam Safety Initiative Team has created a Rumor Control Website to ensure that proper information is being disseminated.**

**Visit [www.lrp.usace.army.mil/rec/lakes/EBRumors.htm](http://www.lrp.usace.army.mil/rec/lakes/EBRumors.htm)**

**Also visit [www.lrp.usace.army.mil/rec/lakes/ebdam\\_safety.htm](http://www.lrp.usace.army.mil/rec/lakes/ebdam_safety.htm)**