US Army Corps of Engineers
St. Louis District®

Media Advisory

Release No. 18-04

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For Release: **IMMEDIATE – July 26, 2004**

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Locks 27 Closing Underway – Possible Problems Emerge

Granite City, Ill. – The 1200-foot main chamber of the nearby Chain of Rocks Locks 27 closed Monday, July 26 at 6:40 a.m., following the last southbound lockage, of the Motor Vessel George King and her barge tow. With that closure, work began almost immediately to put in place a bulkhead at the north end of the lock chamber to isolate it from the waters of the Chain of Rocks Canal, which runs from the Mississippi River to the Lock.

Originally the U.S. Army Corps of Engineers, St. Louis District predicted that the closure, already delayed from its originally scheduled start of July 12 to July 26 due to high river water, would end by August 9. However, a problem has emerged that may require extending that date into a third or even fourth week, thus ending the closure as late as August 23.

Nearly simultaneously with the start of the closure, U.S. Army Corps of Engineers experts received latest readings from instruments called piezometers, in the ground near the locks. These devices measure the elevation of ground water, or the water table. These readings were very unusual and unexpected, and indicated that while the river level was falling, the ground water was not. This confirmed that the ground in the Granite City area remains heavily saturated. Corps experts say that this indicates that the ground water is so heavily charged that literally it may take some time to run out of the ground and back into the river.

In addition to the unexpected ground water level problem, rain this past weekend in the Mississippi and Missouri River Valleys, coupled with predicted weather conditions that may bring repeated rains into the region starting next weekend, are making the Mississippi River's levels more questionable than previously predicted.

The water level problem is a concern because the concrete walls of the lock, extending deep into the river and land, are under extreme pressure from the combination of river water, weight of the land and the ground water. If this pressure is not reduced by lower levels of water, there is a danger of tipping the walls when the water is removed from the chamber and that water's counter pressure that supports the walls from inside is removed.

U.S. Army Corps of Engineers construction, engineering and water management offices immediately notified industry representatives of the problem and have asked them for their assessment of impacts of extending the lock closure if that becomes necessary.

In addition, engineers are exploring partially dewatering the lock and repairing only the top ends of the cross braces on the lock gates, leaving the bottom ends, which they feel are in better material condition, to be repaired at a later time. The engineers' initial calculations are that this would substantially reduce the probability of a failure, though it would not eliminate the possibility.

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Corps officials emphasize that while they are uncertain whether they may be able to complete all the required work, reducing the probability of unpredicted catastrophic failure of the lock gates is a prudent move and that at this time they are pressing ahead to accomplish all that is possible. Engineers are continuing to examine a series of alternatives, along with their costs and risks. They are also consulting with industry representatives daily to learn their concerns. The initial response from industry representatives is that while any delay will be costly, they are eager to work with the Corps to develop the best solution possible and are concerned about the effects of any decisions on Corps work and budgeting.

The problem being repaired is a result of deterioration of the diagonal braces on the lock gates that keep them from warping out of square as they are opened and closed. This has occurred over a period of time. While there is no good time for this work during the normal 365-day-per year operation of the locks, trying to get this job done before the impact of the fall harvest arrives is the best possible alternative.