



# Red Rock Drawdown and Cable Replacement

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG ®

## Location

Marion County, IA

## State(s)

IA

## Congressional District(s)

IA-2, IA-3

## Status

A contract to perform this work (W912EK-10-C-0095) was awarded in May 2010. The drawdown was accomplished in fall/winter of 2010 and the tainter gate cables were replaced. An underwater concrete bulkhead sill was also constructed at this time. The contract includes installation of a tainter gate bulkhead, which will eliminate the need for future drawdowns for tainter gate maintenance. The contract also includes repair of tainter gate operating machinery.

## Description

The Lake Red Rock outlet control structure was designed and constructed with the lake water level at elevation 725 feet. The outlet structure consists of five cable operated tainter gates and 14 sluice gates. The spillway tainter gates have a sill elevation of 735 feet which is 1 foot below the spillway crest of 736 feet. There are eight lifting cables that are used to raise or lower each tainter gate. The cable connection bracket is at an elevation of 735 feet. When the conservation pool was raised in the Spring of 1992 to an elevation of 742 feet, the tainter gate lifting cables and brackets were permanently submerged. During the Flood of 1993, five of the forty lifting cables failed due to corrosion and added stress caused by the flood, rendering the two outer gates inoperable. The tainter gate cables (a total of 40) were replaced in 1993. The cables have an estimated service life of 15 years. In order to maintain the conservation pool at 742 the tainter gates must be kept in a closed position making inspection, maintenance and repair of the tainter gates and the tainter gate lifting cables virtually impossible without a drawdown of the conservation pool. An alternative to a conservation pool draw down was strongly recommended during the public review period of the Environmental Assessment. The preferred alternative to periodic drawdown is construction of a tainter gate bulkhead dewatering system. This will allow dewatering of an individual tainter gate bay. The tainter gate bulkhead will allow inspection and routine maintenance, replacement of cables and painting of gates without need for a drawdown. Lake Red Rock has the largest flood control capacity in the Mississippi Valley Division and provides flood protection for 200 miles downstream.

## Major Work Item (This Fiscal Year)

The concrete bulkhead storage platform was installed. The cantilevered steel bi-rail bulkhead delivery system was installed. Tainter gate machinery was repaired on gates 1 and 5. These work items required intermittent closures of the public road over the dam. Work still pending this FY includes fabrication and installation of a 90 ton bulkhead and repair of Tainter gate machinery 2,3, and 4. This contract has had multiple modifications to date. The painting option of this contract was not exercised due to insufficient contract funds. Once the current contract is complete, painting can be accomplished without drawing down the reservoir. Funding proposed in the FY 13 budget would allow painting to be



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done, which would protect the investment in the current contract.

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