

AGC



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AWARDS 2012

GRAND AWARD
CONSTRUCTION

HEAVY/INDUSTRIAL

JOHN DAY LOCK AND DAM

Location: Columbia River
General contractor: Advanced American Construction
Owner/developer: U.S. Army Corps of Engineers
Engineer: U.S. Army Corps of Engineers
Contract amount: \$18.5 million

The 112-foot-tall John Day Lock and Dam gate stood as an icon of our nation's economic capacity. But at 53 years old it was visibly fatigued. Advanced American Construction was responsible for the complex work of removing the old gate and fabricating, transporting and installing the new 2 million-pound gate during an unprecedented 14-week shutdown of the Columbia River.

To remove the existing gate, AAC sized it into four 500,000-pound sections. Using a 660-ton crane mounted on a flat-deck barge, crews ensured each section of the old gate was removed safely and in a structurally sound manner.

Transporting the gate sections required a second material barge, several tugboats and an elaborate dolly system. The contractor delivered an in-house design and fabrication of the extensive lashing solution and the gear to secure the gates during transport.

Installing the new 90-foot-wide, 16-foot-deep gate posed several challenges. Narrow access to the location of the gate required each section to be delicately hoisted from 100 feet away by the derrick barge and lifted over the dam's bridge — with a boom clearance of a mere 18 inches. During the heavy lifts, AAC constantly monitored and counterbalanced the heavy-lift barge to keep it within the 0.5 percent listing requirements.

The boom, meanwhile, was affixed to a floating barge. This nonconventional rigging included nonstandard, oversized shackles that had to be approved by the manufacturer. Each gate section required fracture-critical welding to secure it.

The contractor also replaced the full mechanical drive system, which controls the lifting and lowering of the gate by balancing two counterweights, both weighing nearly 1 million pounds.

Col. Steve Miles of the U.S. Army Corps of Engineers praised the contractor's work: "The corps relies heavily on competent teammates and the construction expertise of professional firms like AAC. We needed you to develop a sound engineering plan that nailed the tolerances, quality and safety, and you did it."



Advanced American Construction replaced the mechanical drive system at the John Day Lock and Dam.

Photo courtesy of Advanced American Construction