

## Agitators Deliver Chilled Concrete to New Spillway

Granite Construction      Kiewit Construction  
Folsom Dam Auxiliary Spillway

Job Report

The \$900 million Folsom Dam Auxiliary Spillway, constructed in four phases, will provide 200-year level of flood protection to the area. After excavation was completed (Phases I and II), Granite Construction built a 6-Gate Control Structure (Phase III). In the final phase of the project, Kiewit Construction constructed a 1,100' long approach channel which feeds water from the lake to the control structure, and a 3,000' long spillway chute and stilling basin. Both contractors assembled onsite concrete batch plants and utilized Maxon truck-mounted Agitators to place nearly 300,000 cubic yards of concrete. The plants were equipped with liquid nitrogen and ice plants to produce concrete at 40 to 55 degrees to control the heat of hydration within the massive lifts. The majority of the pours were at night as daytime temperatures exceeded 100 degrees during the summer. Maxon equipped the Agitators with insulated bodies and retractable covers to maintain the concrete temperature during transit, and High Dump Swing Away Chutes to allow the Agitators to feed directly to either belt placers or pump hoppers.



Excavation complete, Granite begins construction of the Control Gate (A). The concrete batch plant (B) was set-up temporarily in the spillway to reduce transit distances.



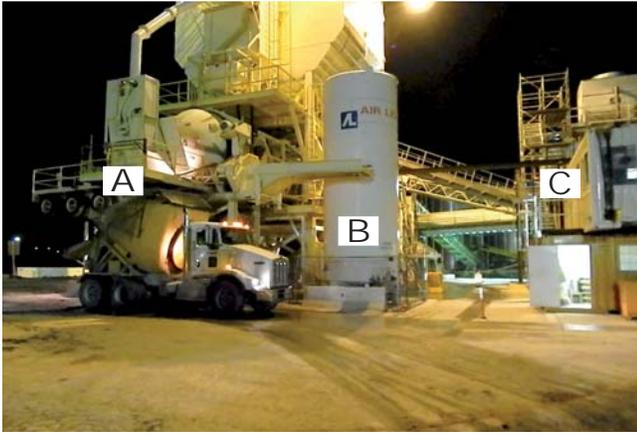
Maxon Agitators transport 115,000 cubic yards of concrete from the onsite batch plant to the Control Gate during the 3 year construction of Phase III.



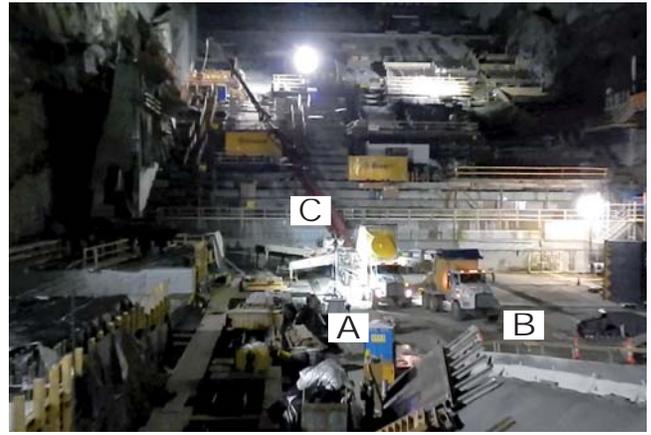
Above: For the Control Gate construction, Granite's Agitators discharged directly to truck-mounted belt placing conveyors. 5' concrete lifts were poured during the night to maintain the temperature of the chilled concrete.

Left: Maxon Agitators supplied for Folsom included spray on insulation and retractable covers to maintain the low temperature concrete during transit. The units were also equipped with High Dump Swing Away Chutes to allow the contractor to quickly change from the Standard Chutes (shown pivoted over the passengers fender) to the High Dump Chute that feeds tall buckets and hoppers.

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12 yard Agitators (A) loaded from central mix batch plant. Plant was equipped with both Liquid Nitrogen Injection System (B) and an Ice Plant (C) to allow the contractor to produce concrete at 40 to 55 degrees.



Construction of the Spillway Chute occurs from the base of the Stilling Basin. First Agitor (A) finishes discharging to the concrete boom pump (B) while second Agitor maneuvers into position.



Dump operator controls hoist/concrete discharge of Maxon Agitor to boom pump hopper (while the next Agitor moves into position to ensure continuous concrete supply to the pump hopper)



Kiewit utilized 50 and 60 meter class Putzmeister concrete boom pumps to reach the upper regions of the Spillway Chute from the base of the Stilling Basin.



Engineers inspect the completed Spillway Chute and the six concrete monoliths in the Stilling Basin designed to slow water flow before discharging into the American River.



Completed Project Rendering: 1,100' Approach Channel (A), 6-Gate Control Structure (B) 3,000' Spillway Chute (C), and Stilling Basin (D).