

LOWER ST. ANTHONY FALLS HYDROPOWER PROJECT ADDITION MINNEAPOLIS, MINNESOTA		YEAR COMPLETED	
		PROFESSIONAL SERVICES 2005 – 2009	CONSTRUCTION 2009
PROJECT OWNER'S INFORMATION			
PROJECT OWNER Brookfield Power	POINT OF CONTACT NAME Mr. Steve Mockler	TELEPHONE NUMBER (207) 723-4341, Ext. 115	

RIZZO Associates (RIZZO) developed the design and final plans and specifications for the addition of a hydropower plant at the 10Mw Lower St. Anthony Falls Lock and Dam in Minneapolis, Minnesota.

This Project used STRAFLOMATRIX™ Turbine technology, with the turbines installed in eight (8) structural housings (Modules). Each Module includes two turbine-generator units in two horizontal rows of one each, with 16 units total in the eight (8) Modules, with each Module having a rated generating capacity of 1,237 kW at 25 ft. of gross head and a turbine discharge 775 cfs. The Modules were installed in a newly constructed reinforced concrete bulkhead located in the existing auxiliary lock. The reinforced concrete bulkhead includes a gallery that houses several electrical and mechanical support systems for the hydro plant, and the gallery is tied in to the existing Corps of Engineers access galleries. The Project also includes an Operation Building and Switchyard that is located on the west bank on the river just upstream from the Corps of Engineers dam.



RIZZO was responsible for the design of the new reinforced concrete bulkhead and tie-ins to the existing Corps of Engineers structure, including extensive stability analyses and detailed calculations using finite element modeling methods. RIZZO was also responsible for the design of several on-shore large foundations, demolition plans and designs, and the Quality Control and Inspection Plan and System Safety Management Plan for the Project. The design process for the Project started in late 2006, and was completed in December of 2007. Construction for the Project was completed in 2009.

The Lower St. Anthony project highlights RIZZO experience with the following deliverables:

- Structural and Dynamic Stability Analysis;
- Hydro Plant Support;
- Design Plans and Specifications for Modifications;
- Drafting Services; and
- Project Management.

