

# NEW SAVANNAH BLUFF LOCK & DAM

## HYDRO ELECTRIC PROGRAM

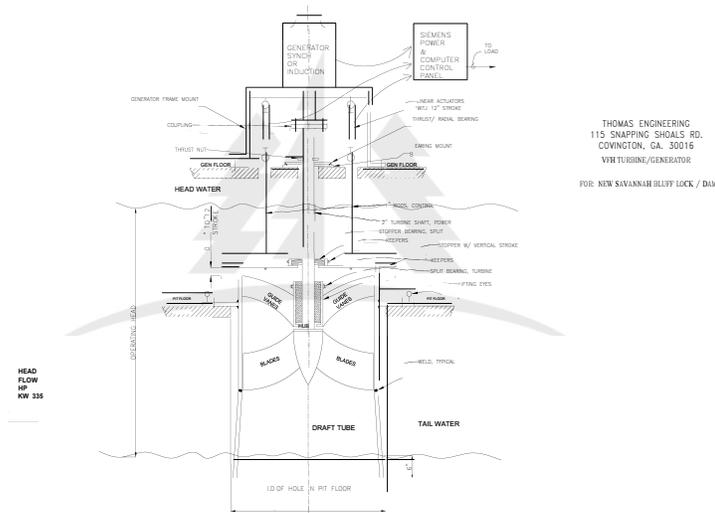
### PROPOSED INSTALLATION OF 3 VFH TURBINES IN EXISTING BAYS

The NSB L&D was authorized and constructed for the sole purpose of supporting commercial navigation between the upper end of the Savannah Harbor to the upstream limits of the Savannah River Below Augusta (SRBA) navigation project just above the 13th Street Bridge in Augusta, Georgia.

When this project was built, it was equipped with three identical turbine structures for potential future installation of hydroelectric turbines. During Congressman Norwood's term, private entities, including Thomas Brothers Hydro from Covington, were asked to help develop and consult on the hydroelectric potential at this site. Presently, those bays can be fitted with 3 VFH hydro turbines, horizontally driving three 335 kW synchronous or induction generators. The combined power generation is approximately 1MW. Those combined 3 VFH hydro units could produce nearly 8 million kWh's per year. Power revenues could exceed \$400,000 annually for many decades, thus allowing the lock and dam to become self-sufficient and not a financial burden on the region. The turbines will NOT change the pool level, actually, the 3 turbines will reduce silt issues, help with flood control and improve water quality.

VFH systems incorporate a series of benefits:

- The mechanically and hydraulically variable turbine, when coupled with computerized software, permits the automatic or remote computer control to fully manage systems in real time.
- Annual O&M is extremely low due to the system's advanced automation.
- The same hydro software program could jointly operate the fish lift and/or fish lock passage and its comprehensive fish monitoring systems.
- Using a refurbished lock channel could also serve as the fish lift passage rather than a lift cage.
- Ideally, since the Augusta Canal Authority already has both the experience and expertise with hydroelectric operations, they are eminently qualified to implement, maintain, operate and oversee the long-term benefits of the hydroelectric program.



draft VFH Turbine™ drawing for NSB L&D

