



Case Study WTP #5

Liquid Oxygen for
Aeration System at
Electric Power Plant

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1-800-400-4683

P/N 21285116

Highlights:

Location — Logan Martin Dam
Scope of Project:

- Design, manufacturing, and equipment install at site— all source from single supplier
- Oxygen storage and feed system for bubblers below the dam
- Equipment designed to operate manually during the study phase to understand oxygen levels in the water
- After study period, equipment system will run automatically with guaranteed startup when oxygen is needed in the river
- Full safety features inherent to the system

Application:

This water quality project used LOX to optimize the oxygen levels for fish and other aquatic habitat. The customer required the liquid oxygen storage package to connect into a single interface system (provided by others). System control prevents gas surging.

Project Background:

Because of Chart's experience providing LOX systems for the water treatment industry, we were approached to provide a complete system for oxygen supply to feed a water improvement system that would be deployed downstream of the dam. The PLC system would need to be directly interfaced with the plant's current operations system. It's for the fish.

Significant Accomplishments:

Total works for the LOX system delivered as turnkey, including equipment (provided by Chart's engineered system group), installation, commissioning, startup and training of the LOX System and PE Stamped Calculations.

The diffuser manifold system included seven orifice flowmeters (in lieu of v-cone meters), seven positioner valves, and one buoyancy fill regulator.

System Configuration:

- (2) Vertical 15,000 LOX tanks
- (2) Ambient Vaporizers
- (1) Common LOX Fill Manifold
- (1) Pressure Reducing Manifold, pre-piped at the factory
- (1) low temperature cutoff switch installed between the vaporizers and pressure reducing station
- (1) PLC Panel
- [Chart Lifecycle, Inc.](http://www.chartlifecycle.com) turnkey installation

