PNEU-LOGIC

Intelligent Solutions for Compressed Air Systems

Success Story: Puget Sound Naval Shipyard

The Puget Sound Naval Shipyard (PSNS) is focused on providing customers with quality, cost effective maintenance and technical/logistics support. Located in Kitsap County, Washington, the PSNS has sites in Bremerton, WA; Bangor, WA; Everett, WA; San Diego, CA; Boston, MA; and elsewhere. The Bremerton PSNS site is the Pacific Northwest's largest Naval shore facility and one of Washington State's largest industrial installations.

COMPRESSED AIR CONCERNS

Prior to partnering with Pneu-Logic, the PSNS Bremerton facility experienced significant problems with compressed air inefficiencies, unreliable system performance, inconsistent delivery of air to equipment and tools throughout the shipyard, and energy cost increases.

Air compressors are designed for production reliability, with little understanding or regard for the cost impacts of underutilization and performance issues. As a result, compressed air systems are typically:

- **Inefficiently operated and maintained**
- **Prone to pressure and fluctuations**
- **Over-designed with excess capacity**
- **Plagued by infrastructure leaks**
- **Wasteful of electricity**

COST-SAVING SOLUTIONS

By installing Pneu-Logic's technology, PSNS exceeded our original engineering estimates that they would **save more than 30%** of their total compressed air related electrical energy consumption. In addition, the US Navy **saved approximately $1.2 million** in capital expenses, based upon Pneu-Logic's recommendations to re-build existing compressors rather than purchase new ones. Currently, the US Navy saves **10,235,000 kWh of energy** and $**388,000 per year**. Considering the huge size of the PSNS operations in Bremerton, these electrical savings directly benefit the Navy, the nation's taxpayers, and the local community.

PNEU-LOGIC SYSTEM INSTALLATION AND INTEGRATION

To provide concurrent management and load balancing of their large and disparate networked compressor system, the Puget Sound Naval Shipyard went live using Pneu-Logic's compressed air management system technology in 2005.

"Our vision to provide Navy-wide best-value services including small, individual jobs and complex maintenance/modernization packages was fully realized. Partnered combinations of public, private, and military assets integrated to maximize available resources, and accomplished just that."

- Dusty Smith, Engineering Director, Pneu-Logic Corporation

PSNS Compressor Systems & Infrastructure:

- 4 - 10 Compressors, 9,950 HP
- 7 – Ingersoll Rand, 4 stage, 1,250 HP Centrifugal Compressors
- 3 – Roger's Machinery, Oil Free Screw, 400 HP
- There are three compressor rooms connected via a fiber/Ethernet network.
- Compressor interfaces are direct PL3000 to PLC via Ethernet.

PNEU-LOGIC COMPRESSED AIR MANAGEMENT SYSTEM

Advanced Pneu-Logic technology continuously monitors three primary control variables: total flow, system pressure, and trim pressure. Along with these control variables, the management system uses flow-based and weighted priority sorting logic to operate the optimum number of base-load centrifugal compressors and oil free rotary screw trim compressors throughout all ranges of total air flow demand.

Pneu-Logic priority staging logic manages the centrifugal compressors (CC) so that:

- Minimum CC as possible is running at any given time.
- All running loaded CC are as close as possible to 100% output.
- CC motor starts are minimized.
- Parallel CC operation is maintained over time.**

**Equal CC flow output is maintained as a dryer's pressure drop changes, as system dynamics change, and as individual CC parameters change over time.

The collection of system performance, efficiency, and energy savings data from the PSNS facility continues to be monitored by the Navy, the local electrical utility company, various contractors, and Pneu-Logic.

About Pneu-Logic

Pneu-Logic is a privately owned company located in Portland, Oregon, with Authorized Resellers located in the US, EU, and South Africa. As the industry leader in advanced compressed air energy efficiency management systems and control technology, Pneu-Logic helps companies 1) substantially reduce industrial compressed air electrical energy consumption and costs through improved operational management and control efficiency, and 2) increase industrial net productivity by reducing process latency periods between demand and supply for air through "real time" compressed air flow management. Pneu-Logic also offers best-in-class compressed air engineering services and assessments.

Contact Pneu-Logic

If you're interested in learning more about our advanced systems and engineering services designed to decrease electrical energy costs and improve system performance, contact us today. Call us toll-free at 866.348.5669 or visit us on the web at www.pneulogic.com.