

## SCADA System for Juneau Douglas Wastewater Plant Sludge Incinerator Cooking Along Nicely

Juneau's sludge incinerator recently got an updated control and monitoring system from Boreal Controls Inc.

The company designed and programmed the system to replace an obsolete operator interface at the Juneau-Douglas sludge incinerator, located just south of downtown.

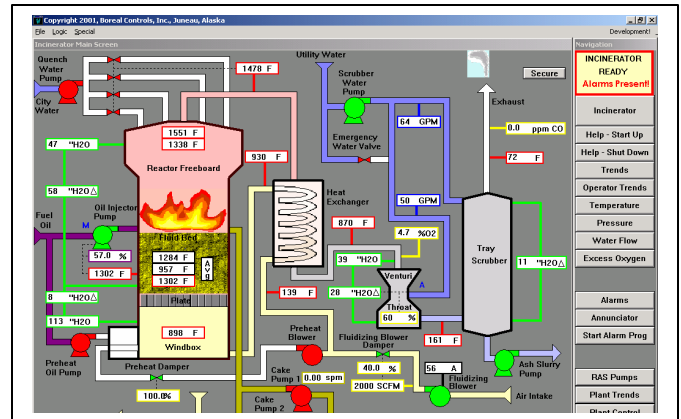
In order to provide flexibility and to avoid long-term obsolescence, the new SCADA system is based on off-the-shelf software running on standard PCs. The system consists of Wonderware for the SCADA software, two Allen-Bradley PLC 5s and two SLC 5/04 PLCs. Communications are through a DH+ network.

The new system allows plant operators to control sludge feed rates, oil injection and airflow and to log data and alarms for the incinerator. It is also capable of producing reports from logged data.

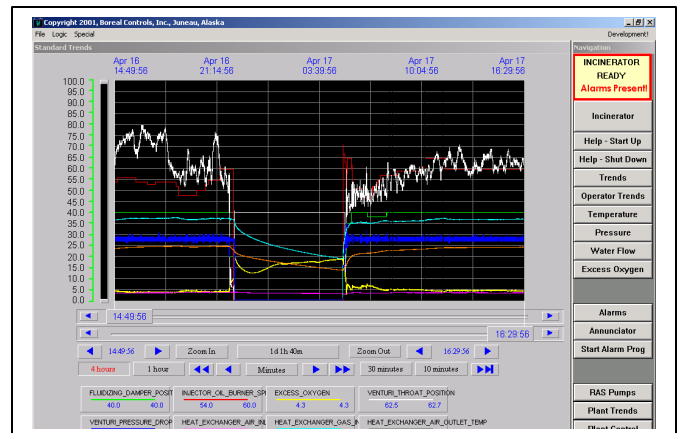
Since the initial installation several wastewater plant control modifications have been added. Return Activated Sludge pump speeds are now controlled based on plant flow. The digester level is now monitored and logged and waste sludge pumping times are controlled by the PLC and can be easily set using the SCADA system.

Chris Strickland, plant operator says, "We love it; it's increased our productivity."

He said it streamlines the process, allowing people to control the system from different locations throughout the plant. "I can turn pumps on and off from anywhere."



Juneau Douglas WWTP Incinerator Main Screen.  
Juneau, Alaska



Juneau Douglas WWTP Incinerator Trend Screen.  
Juneau, Alaska

### Control News

Is produced by the staff at Boreal Controls to keep our customers informed about recent projects and to educate new customers about the types of products and services we provide.

**BOREAL CONTROLS INC.**  
Phone 907-586-8367  
Fax 907-586-4010

## UAS Water Booster Pump Station University's New Pump Station Keeps the Pressure Up

A new water booster pump station for the University of Alaska Southeast is on line with Boreal Controls Inc. providing the pumps and controls for the project.

The booster station services both the main campus at Auke Lake and nearby student housing with three 15-hp centrifugal pumps and a 200-hp high-flow pump.

**Continued on page 2.**

## UAS Water Booster Pump Station

Continued from page 1

BCI President Greg Smith said the company built five control panels and wrote the customized software for the booster station. The 15hp pumps are controlled by Allen-Bradley Powerflex 700 VFDs and the 200hp pump is controlled by a Benshaw Solid State Reduced Voltage Starter. The whole system is controlled by an A-B SLC 5/03 with a Panelview 600 color operator interface.



PLC Control Panel with Three 15hp VFD cabinets.  
UAS Booster Station, Juneau, Alaska.



University Pump Station Interior with Controls and 200hp Pump.  
UAS Booster Station, Juneau, Alaska.

The system was designed by the Juneau civil engineering firm Carson Dorn Inc.

“The pumps are staged on in a lead-lag sequence to maintain a PID-controlled output pressure,” Smith said. The station pressure is maintained within one or two psi of the setpoint.

The PLC communicates with a Siemens building automation system, allowing university maintenance and operations staff to monitor pressure, flow and alarms from their campus office.

## USCG Cape Hinchinbrook Light Station SCADA System

New Power System Controls for Historic, Strategic Lighthouse in Gulf of Alaska

BCI engineers camped out in the historic Hinchinbrook Island lighthouse for a recent project for the U.S. Coast Guard.

The company designed and built an upgraded control system for the site’s two diesel generators, and provided a SCADA system that allows the site to be monitored and controlled by operators in the Coast Guard’s Vessel Tracking Center in Valdez, approximately 80 miles away.

The generators provide power to the lighthouse, DGPS transmitters, VHF repeaters and a microwave radio system, all of which provide critical safety and security functions for the busy tanker, cruise ship and fishing vessel traffic passing through Prince William Sound.

With 100-foot cliffs surrounding the station and heavy seas from the fall storms, the only access to the remote site was by helicopter from Valdez. The job required plenty of helicopter charter time, including four sling loads of equipment and panels.



Cape Hinchinbrook Light Station and the Entrance to Prince William Sound.  
Gulf of Alaska.

The project schedule was very tight, allowing only five months for the complete design, build and commissioning. Within a week of contract award, BCI engineers were on site performing the initial survey. The project was installed and completely functional, one month early.

“This represents the next generation of Coast Guard remote monitoring of generators,” said Gary Parker, electrical engineer for the Coast Guard’s civil engineering unit in Juneau. “This is the first one of its type in Alaska.”



Potato Point Radar Station and Microwave Repeater.  
Valdez Narrows, Alaska.



Generator Controls and SCADA Panel.  
Cape Hinchinbrook Light Station, Alaska.

“When anything goes wrong we know why, and can also do remote diagnostics,” he added. The new system allows the Coast Guard to remotely switch between generators at the lighthouse and graph trends over time.

In a related project, BCI installed a SCADA system for the Coast Guard’s radar station at Potato Point in Valdez Narrows in 1997. The remote site monitors oil tanker and other vessel traffic in and out of the Port of Valdez.

Both systems utilize Allen-Bradley PLCs to monitor and control the generators and power distribution at the sites. The SCADA software is Rockwell Automation’s RSVIEW, which communicates with the PLCs through a microwave radio link.

## Who’s Who at Boreal Controls Inc.

### Employees

**Greg Smith, P.E.:** Founder and President. Greg started Boreal Controls in 1995 after working at other electrical engineering firms on the West Coast and in Juneau. A graduate of Juneau-Douglas High School. With a B.S. in electronics engineering from the Oregon Institute of Technology, Smith focuses on engineering design and specification, programming and system integration of PLC-based control systems and SCADA systems for municipal utilities and industrial plants.

**Tory Oien, P.E.:** Senior Electrical Engineer. Tory has 11 years of experience in design and specifications for control systems, power distribution systems, system mapping, lighting, fire alarm and commercial power systems. He’s also a J-D High School graduate and earned a B.S. in electrical engineering from the University of Washington.

**Eric Nelson:** Office Manager / Project Engineer. Eric works in design, CAD, programming, fabrication, installation and startup of PLC control systems for BCI. He is a J-D High School graduate with a B.S. in electronics engineering from the Oregon Institute of Technology and an M.S. in communications from Southern Oregon State College.

**Sam Smith, P.E.:** Project Engineer and mining and civil engineering consultant. Sam brings over 40 years of experience in design, construction and project management in mining and civil projects to Boreal Controls, holding an E.M. in mining engineering from the Colorado School of Mines and M.S. in civil engineering from the University of Colorado.

**Dan Fagnant:** Staff Engineer. Dan is another J-D High School Graduate and holds a B.S. in computer engineering from Gonzaga University. Dan works in software development, control panel design and CAD drafting.

**Laisne Padgett:** Bookkeeper

**Jeanine Smith:** Control News editor. Smith is a former reporter for the Juneau Empire and has worked in public radio and television throughout Alaska.

## Other Current / Recent Projects

**Outer Drive Sewer Pump Station – Juneau, AK**

**Wastewater SCADA System – Sitka, AK**

**Water SCADA System – Craig, AK**

**Water and Wastewater SCADA System – Cordova, AK**

**Spruce Cape Lift Station Controls – Kodiak, AK**

**Wastewater UV Disinfection Controls – Juneau, AK**

**Last Chance Basin Pump Controls – Juneau, AK**

**Underground Paste Plant Controls and Electrical Module – Admiralty Island, AK**

**Empire Building HVAC Controls – Juneau, AK**

**Rands Drive Sewer Pump Station – Sitka, AK**



Outer Drive Pump Station Control Panels.  
Juneau, Alaska.

**BOREAL CONTROLS INC.**

**3100 Channel Dr. Ste. 210N. Juneau, Alaska 99801**

# Control News

Volume 2, Issue 1

Boreal Controls Inc.  
3100 Channel Dr. Ste. 210N  
Juneau, AK 99801

To: