"Wireless" Traffic Control Solutions

APPLICATION: *Custom Industrial Signal Trailers*
LOCATION: Alberta, Canada/Albian Tar Sands Project

Description

There are new oil discoveries in Canada being worked that don't involve drilling for oil but rather digging for it. Areas in Alberta, Canada have large deposits of oil which have gelled to a tar-like consistency. These deposits are near the surface, mixed with sand and gravel, and can be recovered using conventional strip or open pit mining techniques. To make processing practical, large amounts of material must be moved at the sites using dump trucks such as the CAT 797 series which is as large as a house.

Amec-Colt, the project management company for the site, contacted STC for a custom industrial traffic control solution. The main haul road for the CAT 797 trucks was to have a construction road crossing. Due to the nature of the operations at the mine, the CATs have the right-of-way and the operators agreed that a traffic signal was needed. Construction traffic crossing the main haul road was not allowed onto the haul road, only to cross it when safe.

After discussions and drafting of a spec for the situation, a design was agreed upon between STC engineering, Shell's management and AMEC-Colt engineers. STC agreed to produce four custom steel trailer assemblies with collapsible masts, custom control packages and a custom signal display. STC also furnished a custom radio- activation unit to be used by a site operator to permit traffic to cross the haul road safely. Unlike a regular intersection, the mine runs continuously, this one is manned 24/7.

The signal assembly consists of a 12-inch red DC LED, 8-inch amber and an 8-inch green arrow indication pointing up. In standby the system is in red rest. When construction vehicles are waiting to cross the haul road the operator presses a green mushroom switch on the master control unit. This has a slight delay to prevent accidental triggering of the system. After the delay the radio command is sent to the trailers and the green arrow indication shows. As long as the operator holds the master control button down, the green arrow is presented to the construction traffic. The arrow pointing up indicates traffic is to go straight across the haul road, left/right turns are not permitted.

STC engineering designed a custom control system for the project using an ENCOM 714 radio for communications and proprietary logic controls. In addition to the signal indications, an operator fault indication lamp was included on the trailer enclosures to warn the operator of a problem on a specific trailer.

continued on next page

Operation was enhanced by including a supervisory function in the radios to ensure the master unit was running each signal. The controls included both a solar power control for summer and a generator compatible function for winter months when there is too little sunlight to run the equipment. Power for seven months of the year is provided by a 170W onboard solar array and two sealed batteries. During winter months, a 1000W generator, provided by Shell, powers the system and keeps the batteries charged. In the event a generator fails or runs out of gas, the batteries keep it going for up to 10 hours (assuming temperatures are well below 0 Fahrenheit).

This project was key in furthering the development of STC's position as an Industrial Traffic Control manufacturer. STC has manufactured a variety of custom traffic control solutions for parking garages, truck scales, and bridges over the years. Most projects were custom but STC has managed to quantify many applications into standard packages.

Take these steps to insure the success of your solar-powered project:
1. Location - identify the site of the application; for example, the nearest town, village or city and state.
2. Load - specify the number and size of lamps, timers or other controls (anything which draws power).
3. Duty Cycle - determine how many hours per day and which days per week the load will be drawing power.

Go to "Send us your requirements" at www.SolarTrafficControls.com/support/requirements.php for more details.

Solar Power: a free source of energy
STC's solar-powered systems are designed for quick and easy installation in the field. Our careful front-end engineering minimizes your installation costs and provides years of trouble-free operation. The standard solar power system includes the solar array, system enclosure with all the necessary electronics, color-coded wiring harnesses, sealed batteries and full documentation. DC LED lamp kits can also be purchased. These include the LED beacon, lamp housing and mounting hardware.

STC Systems are Cost Effective
Our solar flasher systems allow you to stretch your budget to obtain the traffic safety devices you need at affordable prices. Most systems are equivalent to the cost of obtaining an AC power drop. Battery life is typically three to six years; less expensive than grid electricity for the same period of time.

Solar Traffic Controls (STC) provides solar-powered traffic control systems for city, state and federal DOTs; police, firefighting and public works departments; facility maintenance and plant safety industries. Our primary products are solar-powered flashing beacon systems used for school zones and 24-hour applications. We also supply specialized flasher systems using environmental sensors and custom communications packages to control the flashing beacon systems. Our product spectrum also includes wireless power systems for ITS, EMS and HAR. STC's products and services are sold through a network of regional distributors who offer technical support for your project.

For more information: Solar Traffic Controls, LLC • 1930 East Third Street, Suite 21 • Tempe, AZ 85281-2929 USA
Tel: 480.449.0222 • Fax: 480.449.9367 • info@solar-traffic-controls.com • www.solar-traffic-controls.com