

The Customer

The Company is a global manufacturer of web handling, air flotation drying, process thermal management and emission control systems. They serve the web coating, printing, packaging and other industrial process markets.

The Process

The site is a coal mine that has been closed for a number of years, ostensibly because most or all of the available coal reserves have been extracted. The mine is slowly filling up with water. It is leaching Methane gas, as well as Ethane gas to a lesser extent. The Methane gas makes up 50% by volume of the atmosphere within the mine. There is only 1-2% by volume Oxygen. The temperature is 60°F. As Methane is recognized as a greenhouse gas potentially harmful to the environment, the goal is to incinerate the Methane gas at ground surface and sell the carbon credits under the auspices of CERR-CONSOLIDATED EMISSIONS REPORTING REGULATION and NEI-NATIONAL EMISSIONS INVENTORY.

The process atmosphere is pumped to the ground surface from the mine. As the Oxygen concentration is insufficient to support combustion, the process gas must be blended with air to support combustion. A regenerative thermal oxidizer is situated at the site for the purpose of incinerating the VOC gases.



The Problem

The Company wanted to measure the LFL concentration of the VOC gases at the inlet of the oxidizer to prevent the oxidizer from accepting a dangerous concentration of VOCs that could get rich enough to ignite or explode.

The volume of process gas, and the velocity of transport, is such that an accurate and fast-responding analyzer is required to measure the %LFL and, upon a high concentration, give an alarm, which is then linked to corrective action, such as venting to atmosphere.

Additionally, the site is not actively manned with personnel, so the analyzer must be stable and require minimal maintenance.

The Solution

The Control Instruments AcuPro Infrared analyzer was chosen for this application because it is a cost-effective solution offering excellent value. The analyzer is accurate for reading Methane, does not require oxygen to operate and has a fast response time, allowing for corrective action to be taken upon alarm so as to prevent process upset. It needs no additional fuel to operate and has many low maintenance features to ensure safety under the demands of this environment.

