



Coke Battery Quenching

Temperature Measurement of Coke in a Rail Car

Q

Question

How do you measure temperature of coke in a rail car to insure proper cooling during the quenching process?

A

Answer

Situation Analysis

When coke is pushed from the battery into the rail car, it is quenched with water. However, before the coke is poured onto the coke wharf, it is often checked again to be sure it is adequately quenched. An infrared sensor is mounted over the rail car and the average temperature is measured. If the coke is still too hot or there are hot spots in the car, a second quench is applied. The instrument should have a wide-angle lens, for viewing a larger than normal target. This insures more accurate measurement of the average temperature of the material and allows for detection of any hot spots that may be scattered around the rail car.

The temperature of the coke is approximately 300°C (600°F) and hot spots can be over 650°C (1200°F).



A

Answer

Solution and Improvements

The solution to the problem is to use an Ircon Modline® 7 series infrared thermometer. This instrument operates at 2-2.6 microns and has a wide-angle lens that allows the instrument to see large target sizes. It is recommended that two or three instruments be located in order to sample the temperature in more than one location. The instrument does not provide the temperature of the hot spot, but does indicate hot spots exist and that additional cooling is required. Alarm outputs are available to alert the operator that the condition exists.

Ircon Product

Modline76-0607

Accessories

- APA-7 Air purge

Benefits

- Reduced maintenance and downtime

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