API-Cecomp Group *n'fo*

Technical & Application Note A121

Application: Monitoring Flare Stack burn out

Type Of company: Public Utility

Location: Washington

Problem: The customer has to monitor and record the burn-off flame in an emissions flare stack. They use 3 thermocouples each displaced by 120º connected to three chart recorders. This configuration is due to the wind causing the flame to lean away from the stack and the need to record the temperatures from each individual thermocouple. They now need to add a transmitter to each thermocouple for local indication and as the input to a remote PLC for alarm notification purposes. When a loop powered transmitter is added the burn-out detection current for the transmitter is causing erroneous reading as it conflicts with the burn-out detection current from the chart recorder.

Note: for additional information on this process see http://en.wikipedia.org/wiki/Gas_flare

Solution: API modified a standard API 4130 G L units to remove the burn-out detection circuitry so there is no conflict with the burn–out detection current from the chart recorder. The API application engineering representative also recommended the customer get the EXTSUP option as the SLC500 programmable Logic controller (PLC) the customer is using requires a single ended input instead of a differential input.
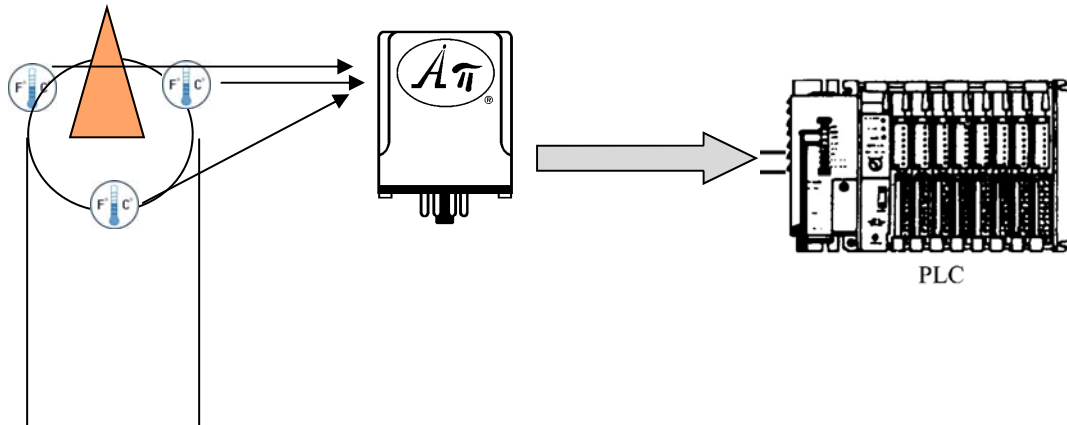

API 4130 G L

Thermocouple to DC Isolated Transmitter

Photo by David Wright

PLC

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