

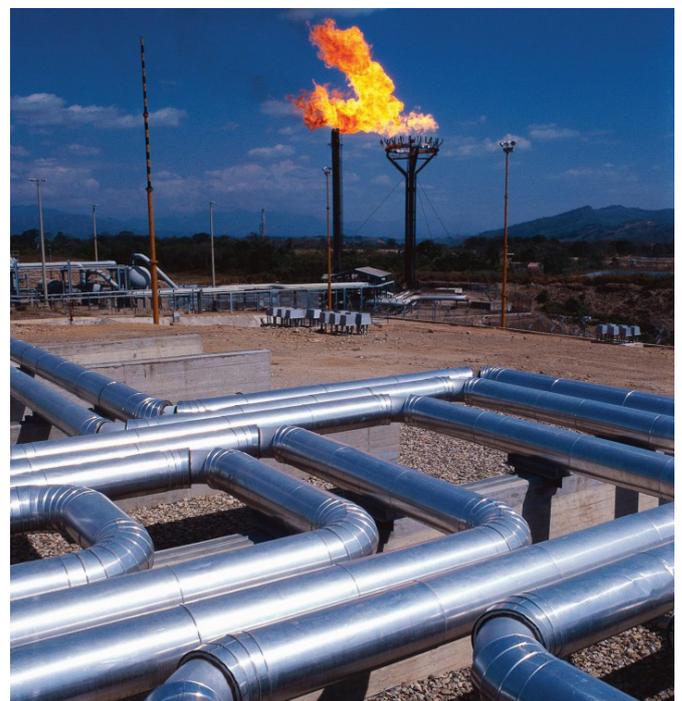
# Improve your plant efficiency through accurate and reliable flare measurement with a GE Supporting Service Agreement

Flares in a refinery, liquefaction or chemical process plant are first and foremost a safety device. In many countries, it is required that the flare be monitored to assure pollution regulation standards are not exceeded. However, a flare metering device can also be used to help plants operate with greater efficiency, leading to cost savings, even in the absence of regulation.

An accurate and reliable flare measurement can identify problems before they become crises. When properly installed and maintained, an accurate flare measurement can save an operator thousands of dollars in its first months of operation, and payback any service investment in fewer than 6 months. A properly maintained flare monitor not only makes good environmental sense, it makes good business sense.

## The Importance of Accuracy

Consider a case of a flare that is operating with 80% methane. At flows of 200 m<sup>3</sup>/hr or only .2 ft/sec on a 42" flare, the meter may not read at all, or be so unstable as not to be believed, thinking there are no process leaks and everything



is operating correctly. Over the course of a 6-month period, this would mean a loss of 692,000 cubic meters of methane, or about \$46,000 at a market price of \$1.90/MMBTU. If the flare is inaccurate, unstable or simply unable to resolve low flow conditions, the plant may be wasting a considerable amount of money.



## Measuring Balance of Plant

Plant operators can also use the molecular weight output on a GF flare meter to help assess if a particular process is contributing excessively to a given set of flow conditions, or as an important tool for measuring plant balance. The use of molecular weight as a diagnostic tool can be invaluable for isolating process leaks quickly so that actions can be taken to correct the problem.

## Added Value through Computational Fluid Dynamics

Additionally, many flare installations from five or ten years ago have undergone changes to piping layout, flow dynamics or process conditions. These flare meters may not be accurately reporting the flow conditions due to any piping changes or added flows that may be contributing to flow profile degradation. By using Computational Fluid Dynamics (CFD), a model of the fluid flow in the reconfigured piping can be performed and correction factors can be determined to produce more accurate measurements. A full service agreement that includes a flare CFD improves the overall performance of the flare meter by better understanding and accounting for the actual flow profile under the current process conditions.

## GE's Supporting Service Agreement

While GE can provide emergency call-out service as needed, the addition of a Supporting Service Agreement (SSA) makes sense when

considering potential plant efficiency gains that can be achieved. Logistically, an SSA allows plant personnel to proactively schedule service quarterly or annually to meet preventative maintenance requirements. An SSA can cover multiple years, offering fixed pricing over a time period which saves time in the negotiating phase. An SSA can be as simple as an annual inspection assuring all of the flare monitoring assets are operating properly. Or, the SSA can be much broader in scope, including CFD, spare parts depots (Part-Smart), 24-hour support, or a dedicated on-site service engineer.



Through an SSA, diagnostic data will be analyzed relative to process conditions and log files and compared with data under controlled, zero flow conditions. These data sets can determine if a flare measurement is operating properly and can assess if it is an issue or a potential issue needs to be corrected.



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BR-233A