

METERING MATTERS IN ENVIRONMENTALLY SENSITIVE AREAS

Blaine Roth, P.Eng., Exploitation Engineer, Husky Energy
Adrian Illincuta, M.Sc., P.Eng., Project Leader, Husky Energy
Geoff Hallson, P. Eng., Manager I & C, Tartan Engineering Ltd.
Ken George, Instrumentation Specialist, Tartan Engineering Ltd.
Richard Enns, P. Eng., Process Engineer, Tartan Engineering Ltd.

ABSTRACT

Projects in the resource extraction industries must be located close to the resource. Frequently, this means these facilities must be located close to or inside environmentally sensitive areas. Facilities in governmentally protected regions raise the bar for metering and increase its prominence. There are more things to measure and the precision requirements can be onerous. The public has very high expectations for metering and the technical merit of some imposed requirements can be questionable.

Husky has several facilities with these constraints, while Tartan has been involved in a number of such projects for various clients, from support to Operations through complete design of new facilities. Our experience is that the normal approach to process simulation, process control and instrumentation selection does not provide a sufficient level of accuracy. The quantities and/or concentration of monitored effluents can fall outside the accuracy of previously installed equipment because of inappropriate equipment design/selection, inappropriate implementation or because of increased diligence required by regulators.

In some locations, on-site meteorological observation and off-site emission monitoring must be judiciously factored into an overall metering strategy. When the technology available in the marketplace is unequal to the task, metering solutions must be developed that may be unique to the variable measured. A range of solutions is possible; from piping changes, through the installation of analyzers, to changes in the process to accommodate measurement needs.

At an existing facility designed by others, Tartan was called in to explain and mitigate unexpected violations of Air Quality standards within an environmentally sensitive area. Tartan was able to explain the phenomenon using a combination of commercially available and in-house modeling. A unique solution was developed to solve the problem involving low pressure metering combined with process control. These measures have been implemented on subsequent projects and one of these projects is highlighted here-in.