



CASE STUDY

ENERGY EMISSION SURVEY

EXECUTIVE SUMMARY

Plant turnarounds are enormous undertakings that rely on many months, and in some cases years, of planning to be executed successfully and on schedule. Turnarounds involve the tedious process of taking an industrial plant off-stream, removing fuel piping, process piping, and any additional equipment that cannot be maintained in place. One of the most time consuming activities after reassembling the plant is checking for leakage at all connection points. Our Swagelok® Energy Emission Specialist worked with our customer and was able to efficiently evaluate system leakage in real-time, as well as deliver a detailed report with recommended actions to improve and optimize system performance.

ABOUT THE CUSTOMER

Our customer is a large natural gas processing facility producing methane, natural gas liquids, condensate and sulphur. Natural gas liquids (NGL) include propane, butane and ethane. The operation is complex with over 300 wells drilled and a design capacity of over 3000 e3m3 per day.

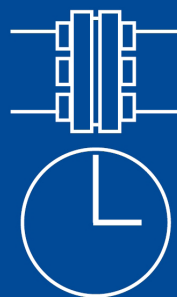
SCOPE OF SUPPLY

Swagelok Evaluation & Advisory Service

- Energy Emission Survey (Turnaround Application)

THE CHALLENGES

The traditional approach to testing for leakage on pipe flanges is to wrap plastic, masking, duct or aluminum tape around each flange in the fuel system and then punch a small hole in the wrap. The fuel system would then be pressurized, and technicians would monitor the hole for any signs of combustible gas. For our customer, a large frame-size turbine means testing 64 flange connections for leakage. The traditional wrapping method can require up to 30 minutes per flange to apply tape and verify the integrity of the connection, which equates to a work order of approximately 32 hours of labour per turbine, assuming that all connections are highly accessible and pass inspection with no leakage. When factoring in the potential for leakage and accessibility issues, it's reasonable to assume that the required labour could double or even triple.



650+ Flanges Tested
290 Hours Saved
90% Reduction in Time Required





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THE SOLUTION

Leveraging our years of application experience and our **Swagelok Evaluation & Advisory Service**, we were able to provide our customer with a service they didn't even know we offered. Over the span of several days we deployed our Energy Emission Specialist and a team of support personnel, utilizing specialized equipment, to efficiently address the up-time leak testing of this area of the plant and maximize scheduling efficiency and localized labour economy.



THE RESULTS

We were able to dramatically reduce the amount of time required to conduct the necessary leak testing for our customer. With the task of finding leaks as the plant was brought back on-line, we surveyed over 650 flange connections that varied in size from 1" to 48". Our specialized equipment allowed us to test a flange connection in less than three minutes. With

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no wrapping required, we were able to pinpoint the exact location of the leak while a team of on-site installers rectified each leak point prior to re-verification. Of the 650 flange connections tested, we were able to find 157 leaks, all of which were repaired and re-tested to be leak free. The **Swagelok Evaluations & Advisory Service** provided our customer with incredible value. Utilizing the traditional wrapping/testing method, 650 flange connections would have required the utilization of 325 hours of labour. We completed our survey in approximately 32.5 hours resulting in a 90 percent reduction in time needed and a valuable cost saving for our customer.

Our customer was extremely pleased with the results of the Energy Emission Survey. By leveraging the **Swagelok Evaluation & Advisory Service**, they were able to gain back valuable time and deploy their own resources to other areas of the plant.

