

Fuel Gas Train Survey Improves Plant Safety

RESULTS

- Plant avoided shutdown costs of \$100K/day
- Overpressure protection solutions improved plant safety
- Thermal Oxidizer solution resulted in \$20K savings



APPLICATION

Fired Heater Fuel Gas Train

CUSTOMER

Corn Milling Plant in North America

CHALLENGE

The plant is an old facility that has been expanded over time and had several pressure control challenges. The plant expansion project changed the process conditions and impacted regulator sizing and overpressure protection systems. However, the plant staff lacked the skills required to detect the undersized regulators and overpressure protection issues. The plant drawings were also not updated to reflect the current process conditions and, as a result, the pressure control specifications for a new Thermal Oxidizer were inaccurate. The plant also had several obsolete regulators whose failure would have resulted in extended downtime. These issues posed safety and economic risks that the plant could not detect or address due to lack of expertise.

SOLUTION

An Emerson regulator expert conducted a fuel gas train survey, which is a comprehensive assessment of the pressure regulators in all fuel gas trains in a plant.

Our expert identified and recommended solutions for several overpressure protection issues at this site. Appropriate relief regulators were specified for downstream equipment that had inadequate overpressure protection and wireless transmitters were recommended for detecting the primary regulator failure in monitor configurations. The Emerson expert also recommended suitable lengths for relief vent lines that did not meet the guidelines for safe operation. This was a safety issue because long vent lines can restrict relief capacity and lead to overpressure conditions. These overpressure solutions will improve both equipment and personnel safety. Overpressure conditions could have also triggered a plant shutdown which costs the customer \$100K/day.

Fuel gas train surveys help customers improve plant safety, minimize downtime, enhance equipment performance and increase staff productivity.



Fired Heaters

In addition to the safety issues, the expert also determined the process conditions in the plant and realized that the fuel gas pressure control scheme for a new Thermal Oxidizer was not designed to meet the current plant demand. Correcting this error would have cost the plant \$20K. Our expert redesigned the system based on the current process conditions and updated the plant drawings to minimize the risk of future design errors.

Finally, the Emerson expert recommended replacement models for several obsolete regulators that were no longer supported by the manufacturer. These recommendations will minimize the downtime risk associated with obsolete regulator failure.

Fuel gas train surveys help customers improve plant safety, minimize downtime, enhance equipment performance and increase staff productivity. After a survey, the customer receives a report that summarizes the key issues that were identified and the recommended solutions. The issues are prioritized based on potential impact to the plant, to help the customer develop their implementation plan. Our experts can also provide the training required to improve the customer's ability to detect and address regulator issues.

RESOURCES

**Fuel Gas Pressure Control Solution for
Fired Heaters and Boilers (D352277X012)**

***“90% of regulators are not
checked periodically for
basic issues.”***

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