

ENGINEERED SOLUTIONS

CASE STUDY

Streamlining Gas Usage

Reporting for a Public Works Department



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BACKGROUND & CHALLENGES

BACKGROUND

A division of a municipal public works department that ensures the functionality and safety of vital county infrastructure across numerous sites

CHALLENGES

1

Required to collect and report gas usage for major users

2

Data collection is time consuming and labor intensive

3

Outdated approach left room for human error

CLIENT BACKGROUND

A division of a local county's public works department, this organization provides essential services that include the design specifications, construction, repair, maintenance, and security of all county buildings and grounds. Their work ensures the functionality and safety of vital county infrastructure across numerous sites.

THE CHALLENGE

The New Jersey Department of Environmental Protection (NJDEP) mandates that all industrial and commercial sites with boilers producing over 5 million BTU per hour must monitor, collect, and report total gas or oil usage annually. Traditionally, this is accomplished by installing mechanical in-line gas meters and manually logging gas usage data each month. These logs are then compiled into Excel spreadsheets for annual reporting.

However, the manual data collection process is not only time-consuming but also labor-intensive, requiring dedicated personnel to record, calculate, and input data manually. This outdated approach left room for human error and inefficiencies in record-keeping and reporting. As a result, the public works division was looking for a more accurate, automated solution that would improve operational efficiency and compliance with NJDEP regulations.



SOLUTION & IMPLEMENTATION

THE SOLUTION

1

Thermal
Dispersion Gas
Meters

2

Honeywell
Paperless
Recorders

3

Automation

4

4-20 mA Inputs

THE SOLUTION

To address these challenges, Rawson/Industrial Controls partnered with Honeywell to provide an automated, reliable solution.

The public works division was equipped with thermal dispersion gas meters that offered enhanced accuracy by automatically compensating for temperature and pressure fluctuations—without needing additional sensors. These gas meters were installed at each building and directly wired to Honeywell paperless recorders.

The Honeywell recorders were designed to track historical trends, monitor real-time gas flow rates, and maintain running totals of gas usage. The recorders were configured with 4-20 mA inputs from each gas meter, although Modbus connectivity could also have been used for data transmission.

The key feature of the solution was its automation: the system generated comprehensive monthly gas usage reports, which were automatically emailed to the site director, eliminating the need for manual logging or human oversight. Additionally, the system provided historical tracking and data visualization, offering insights into gas consumption trends across different time frames.

KEY FEATURES OF THE SOLUTION

01 THERMAL DISPERSION GAS METERS

These meters automatically adjust for temperature and pressure changes, enhancing accuracy without additional external sensors.

02 HONEYWELL PAPERLESS RECORDERS

Real-time monitoring of gas usage, with the ability to generate monthly reports automatically.

03 AUTOMATION

Reports are automatically generated and emailed, reducing manual labor and the chance for human error.

03 4-20 MA INPUTS

Direct data input from gas meters to the recorders (with the option for Modbus connectivity).



RESULTS & CONCLUSION

RESULTS

1

Investment

2Labor and
Efficiency
Savings**3**Return on
Investment
(ROI)**4**Accuracy and
Compliance**5**Operational
Efficiency

RESULTS

The implementation of this automated gas monitoring and reporting system resulted in significant improvements in both efficiency and cost savings for the public works department.

01 INVESTMENT

The total investment in this project was \$100,000.

02 LABOR AND EFFICIENCY SAVINGS

By automating the reporting process and reducing manual labor, the department saved \$37,000 in labor costs annually.

03 RETURN ON INVESTMENT (ROI)

With the project cost offset by annual savings, the solution achieved a return on investment (ROI) in just 2.7 years.

04 ACCURACY AND COMPLIANCE

Automation eliminated human error and ensured consistent compliance with NJDEP reporting requirements.

05 OPERATIONAL EFFICIENCY

By reducing the need for manual data collection and input, the public works department was able to reallocate labor to more critical tasks, improving overall operational efficiency.

CONCLUSION

The public works division's collaboration with Rawson/Industrial Controls and Honeywell to automate gas usage reporting was a resounding success. The combination of advanced thermal dispersion meters and Honeywell's paperless recorders provided a streamlined, accurate, and labor-saving solution, transforming the department's compliance with NJDEP regulations.

The automation reduced the chance of human error, increased efficiency, and provided significant cost savings, creating a model solution for other organizations with similar monitoring and reporting requirements.



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