



CASE STUDY:

How Annual DGA Testing Helped Protect Critical Assets at the Yuma Ethanol Plant

CUSTOMER: Norco Electric Cooperative

Customer Overview

The Yuma Ethanol Plant depends on reliable electrical infrastructure to maintain continuous operations. With multiple oil-filled transformers supporting critical production equipment, ensuring the health of these assets is essential to minimizing downtime, protecting production, and reducing maintenance costs.

In September of 2023, the facility began partnering with High to Low Voltage to establish a proactive transformer maintenance program utilizing the benefits of Dissolved Gas Analysis (DGA) to test eight transformers that support their operations.

Fast forward to 2026, High to Low Voltage now monitors 14 transformers for Yuma Ethanol Plant that support operations by providing actionable data that allows maintenance teams to identify developing issues before costly failures occur.

The result is a proactive maintenance strategy that improves reliability, supports maintenance budgeting, and reduces operational risks.

The Challenge

Like many industrial facilities, the Yuma Ethanol Plant recognized that transformer failures can occur without visible external warning signs. Internal electrical and thermal faults often develop gradually, remaining undetected until they result in equipment failure, unplanned outages, or costly repairs.

The primary objectives of establishing a transformer monitoring program were to:

- ❶ Collect a baseline health assessment of the facility's transformer fleet.
- ❷ Gain insight into the internal condition of each transformer.
- ❸ Improve future maintenance planning.
- ❹ Simplify routine oil sampling for ongoing predictive maintenance.

Plant leadership recognized the value of moving beyond reactive maintenance toward a predictive maintenance strategy that could identify problems early while maximizing transformer life.

The Solution

High to Low Voltage mobilized an experience field service team to the plant site to perform transformer oil sampling, installing permanent external sampling ports to simplify future maintenance, and coordinating certified laboratory testing of the collected samples. By combining field expertise with predictive diagnostic testing, High to Low Voltage established a detailed baseline of each transformer's condition while making future oil sampling safer and faster.

Following analysis of the oil samples, our technical team thoroughly reviewed the results and developed a comprehensive transformer health report for each unit, identifying current operating conditions and any indicator of developing faults. These findings were presented alongside practical maintenance recommendations and actionable insights to support proactive asset management. Upon completion of the assessment and reporting, the field team successfully demobilized.

Results

The project successfully established a baseline health profile for all eight transformers while providing valuable information regarding the condition of each electrical asset.

Rather than simply collecting oil samples, High to Low Voltage translated laboratory data into actionable maintenance intelligence.

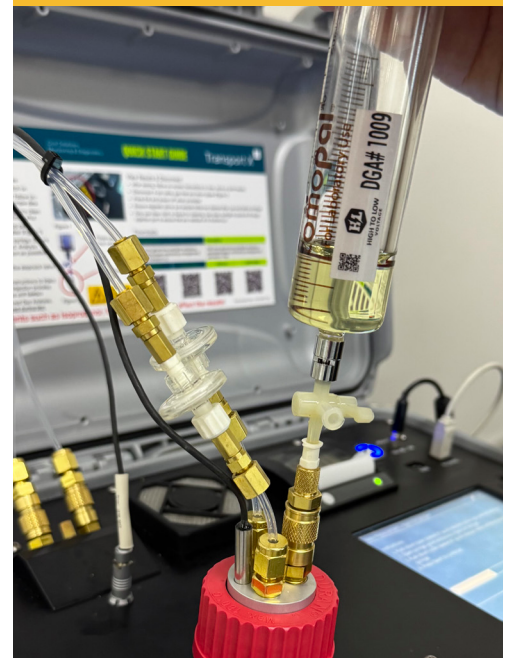
The customer gained valuable insight into:

- Overall transformer health
- Evidence of overheating
- Potential insulation deterioration
- Early indicators of partial discharge
- Signs of electrical arcing
- Oil condition and aging
- Recommended maintenance priorities

These findings provide maintenance personnel with the information needed to proactively address developing issues before they become equipment failures.



**Addressing
Issues Before
They Become
Problems**



Customer Perspective

"Since High to Low Voltage has been performing our DGA testing for us, their reports have identified dangerous gas levels and an insulation issue before they became major problems. This information has helped us prioritize maintenance, allocate budgets, and make proactive decisions regarding our transformers. The process is seamless, professional, and provides tremendous value."

- Norco Electric Cooperative

Why High to Low Voltage?

While the Dissolved Gas Analysis (DGA) testing provided a detailed snapshot of each transformer's condition, the true value of the project extended well beyond laboratory results. High to Low Voltage combined certified testing with experienced field service personnel who installed permanent external sampling ports, reviewed laboratory findings, and translated technical data into practical recommendations that the customer could use to plan future maintenance.

Unlike organizations that provide testing alone, High to Low Voltage supports the entire transformer lifecycle. From routine oil processing and preventive maintenance to field service, repairs, reconditioning, emergency response, and replacement equipment, our team helps customers turn equipment condition data into informed maintenance decisions. The result is a proactive approach that reduces operational risk, extends transformer life, and helps keep critical facilities running reliably.

Conclusions

The Yuma Ethanol Plant engagement demonstrates how proactive transformer monitoring can deliver immediate and long-term value.

By evaluating eight critical transformers, installing permanent sampling ports, and providing comprehensive Dissolved Gas Analysis reporting, High to Low Voltage helped the customer establish a foundation for predictive maintenance and informed asset management that can now be carried out annually with any new transformers that enter their fleet.

Most importantly, this project illustrates our philosophy:

***We don't just test transformers.
We help customers protect their operations.***



**Ready for
a Proactive
Approach?**



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VOLTAGE**
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