

How a Midwest Electric Utility Cut Downtime and Lifecycle Costs with a **Field-Serviceable SF₆ Analyzer**

Replacing ship-back calibration with on-site, swappable sensor modules removed three months of analyzer downtime per cycle — and nearly a third of two-year ownership cost.

● THE PROBLEM

Traditional SF₆ analyzers must be shipped back to the manufacturer every 1–2 years for calibration — creating equipment downtime, added labor, and hidden logistics costs.

● THE SOLUTION

FLEX sensor modules are pre-calibrated and field-replaceable. GasQuip proactively tracks expiry and ships replacements before calibration lapses — the analyzer never leaves the substation.

BACKGROUND

The Midwest Electric Utility (MEU) historically relied on a traditional SF₆ analyzer that had to be returned to its manufacturer for calibration and service every one to two years. The instrument was technically capable — but the service model introduced steady operational friction:

- Analyzer downtime** through every service and calibration period.
- Scheduling conflicts** across maintenance crews waiting on one shared unit.
- Added labor** to pack, ship, track, and re-commission the analyzer.
- Unbudgeted logistics**, freight, and service charges each cycle.

As SF₆ testing demand grew, dependence on the OEM compounded these delays. Paired with staff turnover, evolving tariff requirements, and inconsistent OEM support, the model became a measurable source of operational risk.



FLEX Modular SF₆ Analyzer. H₂O, SF₆, and SO₂ sensors are independent, pre-calibrated modules a technician can swap on site.

< 5 min
MODULE SWAP

0 days
SHIP-BACK DOWNTIME

32%
LOWER 2-YR COST

8 yr
SERVICE LIFE

Two Ways to Keep an Analyzer Calibrated

The same two-year maintenance interval, handled two very different ways.

TRADITIONAL SHIP-BACK ~97 days off-line	FLEX MODULAR 0 days off-line
<ol style="list-style-type: none"> 1 Tech contacts the OEM to request calibration; a reply comes back days later. 2 Crew spends hours packing the padded crate, printing customs docs and labels, and staging it for pickup. 3 Unit is in transit 7–10 days each way to the manufacturer. 4 OEM averages a ~3-month calibration turnaround before the unit returns. 5 Round-trip freight + a ~\$8,000 invoice arrive with the analyzer. <div style="background-color: #ffe6e6; padding: 10px; margin-top: 10px; color: red;"> Analyzer out of service ~3 months per cycle — crews share or rent a backup. </div>	<ol style="list-style-type: none"> 1 GasQuip tracks expiry and notifies MEU before calibration lapses — no chasing the OEM. 2 A pre-calibrated replacement module ships directly to the substation. 3 A field tech swaps the module in minutes — the analyzer never leaves site. 4 The used module ships back in the same box with a prepaid label. <div style="background-color: #e6f2ff; padding: 10px; margin-top: 10px;"> No shipment. No calibration downtime. No disruption to the testing schedule. </div>

Module cadence – Year 1: replace the H₂O module. Year 2: replace the H₂O, SO₂, and SF₆ modules. Each is pre-calibrated and tracked by GasQuip.

What It Costs Over Two Years

COST COMPONENT (PER 2-YEAR CYCLE)	TRADITIONAL OEM	FLEX MODULAR
Calibration / replacement sensors — ship-back calibration vs. 4 field modules	\$8,000	\$6,600
Freight — round-trip vs. prepaid module returns	\$400	\$0
Packing, handling & admin labor	\$200	\$40
Downtime cost — ~97 days off-line @ ~\$12/day	\$1,164	\$0
2-YEAR TOTAL COST OF OWNERSHIP	\$9,764	\$6,640

THE OUTCOME

<h2 style="margin: 0;">\$3,124</h2> <p style="margin: 0;">saved every 2-year calibration cycle</p>	<h2 style="margin: 0;">32%</h2> <p style="margin: 0;">lower 2-year total cost of ownership</p>	<h2 style="margin: 0;">~97 days</h2> <p style="margin: 0;">of analyzer downtime eliminated, per cycle</p>
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By moving to field-replaceable modules, MEU turned an **unpredictable, OEM-dependent service event** into a routine on-site swap — with budgetable costs, no shipping logistics, and an analyzer that stays in service through every calibration cycle.