

Success Story: Williams

Markets Served
Data Center & IT

"We've had really good luck with Eaton's reliability. That and the high level of service keep me going back to Eaton®."

Chris James, the data center supervisor

Power Xpert 9395 delivers high reliability, efficiency

Location:

Tulsa, Okla.

Segment:

Energy Infrastructure

Problem:

The company needed a robust solution capable of providing both redundancy and efficiency.

Solution:

Power Xpert™ 9395, Service

Results:

Unprecedented availability, performance and efficiency have been achieved with multiple Eaton 9395 units.

Background

As one of the largest providers of energy infrastructure in North America, Williams' business segments include interstate natural gas pipelines; midstream gathering and processing; natural gas and natural gas liquids transportation; and olefins production.

In 1982, Williams started to assemble its nationwide system of interstate natural gas pipelines with the purchase of Northwest Energy Company, followed by acquiring Transco Energy Company in 1995, a bid that established Williams as one of the largest-volume transporters of natural gas in the United States. In 2001, the acquisition of Barrett Resources added significant natural gas reserves and increased Williams' exploration and production profile. More recent additions to the company's energy profile

include increased expansion in the Marcellus Shale basin in the northeast, where Williams has had a pipeline presence for more than 50 years.

For more than 60 years, the company was known as Williams Brothers, before adopting the name The Williams Companies, Inc. in the 1970s in order to reflect its diverse businesses. Beginning in 1997, the firm began going by the simplified name of Williams.

Challenge

Ensuring high availability for nearly 600 servers, 100 network switches and five tape libraries is no small task for Chris James, the data center supervisor for Williams' Tulsa facility. "An outage here would not be a pretty thing," he emphasizes.

For years, the company had relied on the continuous uptime provided by a pair of 750 kVA Power Xpert 9395 uninterruptible power systems (UPSs) and a pair of 750 kVA Eaton 9315 units. But as the 9315s approached the end of their useful life — following more than 15 years of successful operation in the facility — Williams found itself in need of supplemental power protection.

In addition to meeting ongoing reliability demands, the company sought a new UPS offering scalability, efficiency and a small footprint. After more than 16 years of success with the Eaton brand, the company didn't waste any time honing in on two more 9395 units. "We've had really good luck with Eaton's reliability," James shares. "That and the high level of service keep me going back to Eaton."

Solution

Williams opted to bolster its two existing 750 kVA 9395s with a pair of 550 kVA models. With the original pair delivering the data center's A side of power, and the two new units supplying the B side, the company is able to achieve ultimate availability.

"Both feed the same data center," James explains, noting that each set of UPSs is paralleled together to provide 2N+1 redundancy.

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The 9395's ability to deliver unparalleled reliability can be attributed in part to its inherent redundancy option, which allows the units to be configured so uninterruptible power modules (UPMs) automatically act as N+1 redundant systems. Traditional UPS manufacturers, on the other hand, cannot deliver this supplemental availability without adding a more costly second UPS.

"I like the fact that internally, they look like an N+1 system," James says. "They load balance very well."

Williams' 9395 units also leverage the synchronization, load sharing and selective trip capabilities of Eaton's patented Powerware Hot Sync® technology. The unique peer-to-peer architecture eliminates the need for a single UPM to depend on any outside source for its control. Instead, multiple UPMs share the load equally, eliminating any system-level single point of failure.

"The A side and the B side UPSs are running parallel to share the load, but at any point, I could shut one UPS down and the other would carry that load," James reveals. "But also, if I had to shut the entire A side down, then the B side would carry the load share, or vice versa. It's a pretty robust system."

In addition to providing redundancy and increased system reliability, the modularity of the 9395 allows Williams to easily adapt to future changes in load demands or reliability requirements without having to purchase an additional UPS. Instead, the 9395 can be expanded in the field by adding more modules for redundancy or capacity. This level of scalability saved the company money right out of the gate.

"We were originally going to replace the old units with two 750 kVAs," James recalls. "But with the scalability option, we realized that we could add the two 550 kVA units upfront, and more modules later. The cost savings was quite a bit," he acknowledges. "That really helped us."

Even more, the redundant modules allow Eaton field technicians to completely isolate and service one module while the others carry the load without going to bypass, another advantage James values.

"We really don't have to schedule a maintenance window," he explains. "Our technician can come out on any afternoon and start the PM procedure, moving loads back and forth, and we never see an interruption. That has worked out really well."

In addition to its impressive reliability and scalability features, the 9395 is also poised to help Williams achieve significant utility savings through its high efficiency rating of greater than 94 percent, which slashes utility costs, creates cooler operating conditions, enhances reliability and extends the overall life of the UPS components.

"The efficiency played a big role in our decision to go with the 9395," James confirms, noting that Williams is tracking its power usage effectiveness (PUE) — a measure of how efficiently a data center uses its power — as well as data center infrastructure efficiency (DCIE), a performance improvement metric used to calculate the energy efficiency. With the average data center rating falling at 1.8 PUE, James reports, "We've already gone from 1.55 to 1.38 since we put in the UPSs." Furthermore, the company reduced its DCIE from .72 to .65.

Furthermore, James estimates that the 9395s have shaved up to 5 to 10 percent off the data center's monthly utility bills. "The new units have really helped us with that," he shares.

The 9395's small footprint— up to 60 percent less than competitive units —was another big selling point for Williams. "It made it a lot easier because of its size and configuration flexibility," James notes. "It allowed us to position everything so if we need to add another 550 kVA down the road, we can do that."

Williams remains confident in the ongoing performance of its UPSs thanks, in part, to an Eaton service plan that includes regularly scheduled preventive maintenance calls. Noting that he has a "great working relationship" with his Eaton customer service engineer (CSE), James says he values having the support of an individual who is not only familiar with his site, but also readily and easily accessible.

"Eaton has great processes in place in the event we ever do have an issue, and I like knowing I've got a service tech that's local," he points out. We can call in a problem and have someone up here within hours. We never have any issues," James adds. "It just works really well."

Results

Williams has been so pleased with the performance of its 9395 units at its Tulsa site that the company has also commissioned 9395 units at its Houston and Salt Lake City facilities. With the 9395s in place, Williams is able to:

- Ensure continuous uptime to its critical data center equipment
- Bolster reliability by paralleling units for N+2 redundancy
- Easily expand its power protection solution with the modularity of the 9395
- Slash utility costs and improve PUE with the 9395's high efficiency rating
- Preserve valuable data center space with the unit's small footprint
- Maintain the ongoing health of its units with an Eaton service plan



Power Xpert 9395

Learn how the Power Xpert 9395 can help you at Eaton.com/9395.

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