



CASE STUDY

Quad Graphics: Peak Saving in the Press Room

How Quad Graphics participated in NVE's PowerShift Pilot Program to reduce its energy bills

BACKGROUND

Founded in 1971 in rural Pewaukee, Wisconsin, Quad Graphics is now one of the largest printing companies in the world. One of the company's key principles includes a focus on social responsibility and environmental impact. Effective energy management across more than 54 facilities is one way Quad Graphics reduces its environmental impact.

Many of these facilities participate in demand side management programs with their local utilities. The facility at Fernley, Nevada, was invited to participate in the Powershift Commercial Demand Side Management Pilot offered by the local utility, NV Energy (NVE). The Powershift Pilot would provide Quad Graphics with the opportunity to save costs on peak demand charges by participating in demand response. Generac Grid Services was chosen by NVE to be the Powershift program provider. With

a sophisticated energy management program in place, Quad Graphics was eager to participate in the pilot.

THE CHALLENGE

Quad Graphics printing facility was a large, complex, multi-asset, order-based business with seasonal, highly fluctuating operations. Quad Graphics' operations are dependent on other industries such as retail that tend to change rapidly, making operations less predictable.

It was determined that the facility had an undersized chiller – the majority of chiller capacity was used for production with little left for HVAC. While already creating some level of occupant comfort compromise, this also eliminated the opportunity to use excess cooling capacity for demand response participation. Thus, Generac Grid Services was tasked with creating a control

strategy that was customized to the facility and which had little impact on operations.

Since this was a highly utilized facility with a complex operating environment and high equipment load, the challenge was determining the best way to support Quad Graphics considering all of these variables and challenges.

THE SOLUTION

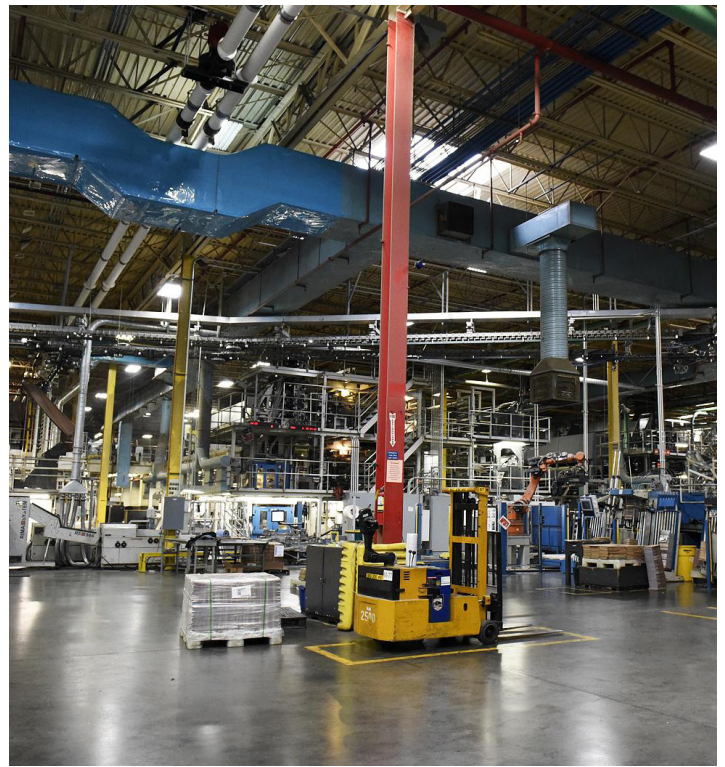
Generac Grid Services sent a team of program engineers to the Quad Graphics manufacturing facility. There they worked with the local facility management team and performed a detailed site audit. The goal of the audit was to develop a control strategy and identify facility equipment and systems that would provide maximum benefits for Quad Graphics. Due to the major constraints at the facility, A control strategy was created that focused on auxiliary load – assets that would not impact regular operations significantly.

With a control strategy in place, the facility was provisioned into the Generac Grid Services platform, providing real-time control and optimization for demand response and peak demand management.

Generac worked with Quad Graphics and local contractors to install on-site gateways to communicate with plant HVAC, exhaust fans, rooftop units, air handlers, heat ventilation, bailors and shredders. By integrating these assets into the distributed energy control platform, Quad Graphics was able to input pre-defined constraints, ensuring process variables stayed within limits set by facility operations while providing demand response capacity when called upon.

“We prefer a more sophisticated solution that gives us better operation flexibility. The platform provides that type of control.”

- BRUCE MILLS, SENIOR FACILITIES
ENGINEER AT QUAD GRAPHICS



RESULTS

Since operations are variable, Quad Graphics facility operators had access to the platform's, where they could view real-time data for their control systems and update constraints to reflect current operating trends. The facility participated in 15 demand response events with an average capacity curtailment of 121 kW for each event, saving the facility over \$5,000 on its annual energy bill.

Quad Graphics was new to demand side management, and this project provided clarity in understanding how auxiliary loads could be utilized to provide energy savings without interfering with critical operations at the facility.