



NYSERDA

Calspan Benefits from Long- and Short-Term Efficiency Upgrades

Case Study

Company Name:
Calspan

Industry:
Miscellaneous Industrial

Location:
Buffalo, NY

Total Square Feet:
2 million sq. ft.

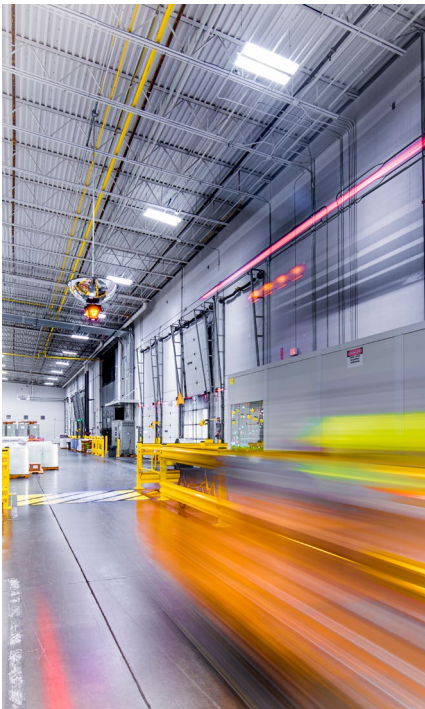
Overview

Calspan, an independent provider of technology development services and systems in the aerospace, defense, and automotive industries, operates a testing complex located in Buffalo, New York. The campus houses several different research, laboratory testing, and office areas. The main features include a transonic wind tunnel, aerospace development, automotive crash testing, and automotive tire testing. Calspan's Buffalo campus consumes approximately 30 million kWh of electricity and 36,000 MMBTU of natural gas annually.

In an overall effort to maintain operations and improve energy efficiency across the site, Calspan partnered with CJ Brown Energy for a full-time, on-site energy manager (OsEM) through the New York State Energy Research and Development Authority's (NYSERDA) On-Site Energy Manager Pilot Program. The program ran over a 22-month period from October 2020 through September 2022.

Goals

- Develop and drive methods to achieve a 2% reduction in annual energy of electricity and natural gas. This correlates to target numbers of 583,730 kWh of electricity and 725 MMBTU natural gas saved.
- Provide guidance and expertise to help maximize financial benefits of relevant energy efficiency incentive programs
- Make changes to preventative maintenance and training schedules to ensure knowledge of on-site equipment and protocol is understood.



Measures Taken

The OsEM worked hand-in-hand with Calspan's engineering, facilities management, technicians, and project execution teams to identify energy capital projects, energy savings measures, and to report on program performance. A total of 60 energy conservation projects on 10 different buildings were identified with correlating energy and financial savings. These savings were found through several data logging processes on systems throughout campus. In many cases, HOBO data loggers with temperature sensing probes were installed on plumbing for testing systems across the Calspan campus. In other cases, HOBO data loggers were used to monitor space, entering, and existing air temperatures related to HVAC systems in the different facilities.

In addition to data logging, mechanical system data was gathered from performance sheets or nameplates and entered into spreadsheet calculations or energy models. Some of the recommended energy improvements include operational setpoint adjustments, HVAC replacements, building envelope upgrades, lighting replacements, mechanical repairs, control system optimization, and VFDs. Efforts were then focused on the conservation projects with larger projected savings.

Meetings were held to focus on driving proposals into implementation with Calspan staff of the different business units. The OsEM helped move these projects through the capital expenditure approval process, and in some cases, to final implementation.

Results

Calspan has implemented or approved implementation of 21 of the suggested 60 conservation projects. These projects are aimed to be completed between 2022 and the end of 2023. Significant electric savings were generated in the short term with the recommended LED lighting replacements for the interior and exterior of several buildings. Envelope improvements mostly consisted of air sealing and weatherstripping, which helped decrease annual natural gas usage.

The largest electric savings were found by installing variable frequency drives (VFDs) on several pumps in the transonic wind tunnel, which made up 73% of the savings.

Calspan can now expect annual savings of 3% on electricity and 20% savings on natural gas. Savings will continue to increase as further energy conservation projects are implemented.

The NYSERDA On-site Energy Manager Program

Through the On-site Energy Manager (OsEM) Pilot Program, NYSERDA cost-shares up to 75% of the cost to hire an OsEM. OsEMs work with companies to develop and implement successful energy and productivity projects. Projects may include operation and maintenance improvements, behavioral changes, energy efficiency upgrades, process improvements, throughput and scrap reduction improvements, and cost management.

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