CASE STUDY
MEDIUM-VOLTAGE SWITCHGEAR

S&C ELECTRIC COMPANY
Excellence Through Innovation

S&C Reduces Cost and Improves Safety at a Movie Studio

S&C Featured Solution: Custom Metal-Enclosed Switchgear

Location: Toronto, Canada

Customer Challenge

Cinespace Film Studios, a major movie and TV set company based in Toronto, is located on the site of on old glass manufacturer. Glass manufacturing is very energy-intensive. As a result, the site had several high-voltage lines with transformers and switches going into and around it, some of which Cinespace no longer needed. When Cinespace took over the site, unnecessary transformers were removed from service and primary cables were isolated. However, the existing structure had to remain to supply the necessary loads.

This system was costly, had a large footprint, and was unreliable because of the excessive amount of equipment that had to remain energized to facilitate the necessary loads. The existing substation design consisted of overhead air-insulated structures and outdoor switching and protection equipment, all of which was exposed to pollution and other environmental hazards. This pollution included industrial dust, foliage, and animal contact and waste, which can cause line-to-line faults and result in unplanned outages. These unplanned outages could set the schedule for production back several days, costing Cinespace thousands of dollars in delays and wasted production time, as well as damage to the equipment. Compounding matters, the old switchgear and protection equipment was from a manufacturer no longer in business, meaning parts were difficult to source, training was unavailable, and there was no local support.

Being air-insulated and exposed, the old substation and overhead bus could not be isolated, grounded, and maintained while adjacent conductors were live. This meant a complete outage had to be arranged whenever any work was required on the switchgear. It also meant that, to isolate and ground the substation, the operator would have to go into the main building, switch off the power, return to the switches with a key, and then ground the switchgear. This was a huge safety concern because if a fire were to occur in the main building, someone would have to enter a burning building to first turn off the power to ground the switchgear and then make it safe to prevent a further electrical fire.

Finally, the switchgear's large footprint and numerous open-air lines was an eyesore on the set, causing problems during filming. It also took up a lot of space that could have been put to a more profitable use.

Realizing the existing system was insufficient, Cinespace engaged Powerteck Limited to upgrade the site's power system. Powerteck assessed the site and designed a strategy to remove the redundant items, reduce the footprint, and improve the safety of the remaining equipment.

"Powerteck has benefited from a longstanding relationship with S&C built on trust and quality. We are very happy with the solution provided by S&C and look forward to collaborating together again on a future project."

– Rod Bell, President, Powerteck Limited

S&C's solution enabled Cinespace to make more profitable use of its land and reduced the need to rent space off-site.

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S&C Solution

Powerteck has a longstanding relationship with S&C Electric Company, and it trusted that S&C could provide the expertly tailored solution Cinespace required. In fact, it went directly to S&C for a solution without releasing the job to tender. S&C ultimately supplied custom metal-enclosed switchgear to the site that was more efficient, safer, and more compact than the existing equipment.

Cinespace required a flexible solution that could cope with the varying power requirements of indoor and outdoor sets as well as the different voltage requirements and cable configurations. Knowing Cinespace worked on tight deadlines and needed the switchgear configured quickly, S&C liaised directly with the local utility to confirm its requirements. Once the utility was satisfied the S&C solution complied with its standards, S&C designed custom switchgear to meet Cinespace's specific requirements. The final switchgear was weatherproof, compact, and had superior safety features that included ease of access and grounding provisions. The solution also allowed for future expansion and ensured the customer could make custom changes routinely and without interruption of the facility.

S&C manufactured the 27.6-kV custom metal-enclosed switchgear to ISO 9001-quality standards.

The switchgear was installed on the south end of the site. Before the project, Powerteck supplied Cinespace with another lineup of switchgear at the north end, and S&C worked with Powerteck to supply a custom lineup of switchgear to meet its requirements. S&C assisted with training and helped Powerteck install and commission the switchgear units.

Results

The system upgrades were completed on time and on budget, with a 100% safety rating. The site is now safer because redundant equipment is no longer energized, and all components are sealed inside a tamper-proof enclosure.

Powerteck is licenced and trained to reconfigure the custom metal-enclosed switchgear whenever required. This means Cinespace can engage Powerteck to make fast, convenient, custom changes to the power supply to suit the ever-changing set designs and prop demands. The new metal-enclosed switchgear is also virtually maintenance-free.

Cinespace was also renting additional land off-site for parking. Now that the old, redundant equipment has been removed, the company has enough space for more on-site parking, and it has less need to rent land off-site, thus increasing its productivity and reducing operating costs.

Figure 1. The new S&C custom metal-enclosed switchgear is compact, safe, and tamperproof.