

# White River Hydro Project

White River, ON, Canada (2016)

PRODUCT USED:

**Hard-Cem®**

## ENGINEER:

MWH Global

## CONTRACTOR:

Pic Mobert Hydro Inc.

## READY-MIX SUPPLIER:

Lafarge

## BACKGROUND

With the combined efforts of Regional Power Inc. and the Pic Mobert First Nation, the White River hydro project was successfully completed in 2016. Located approximately 70 km (44 mi) west of the Township of White River in Ontario, Canada, this project consists of two separate generation sites, Gitchi Animki Bezhig (Upper) and Gitchi Animki Niizh (Lower). Both of which can be found around 10 km (6 mi) from each other and have replaced the pre-existing White Lake Dam. Consequently, the new Upper generation site has taken over the function of the lake level and flood control.

To reach this point of functionality, the new structure first had to overcome the impact of being surrounded by constant running water and debris. Like many concrete hydroelectric structures before it, this project needed a high resistance to erosion. Without that, it would be vulnerable to significant erosive damage, which would compromise its integrity and require downtime for repairs.

## SOLUTION

The concrete hardening admixture Hard-Cem was the perfect solution to this challenge as it doubles concrete wear life under harsh conditions. As a result, when added to concrete, Hard-Cem's proprietary technology not only extends the life of the structure but also improves its structural safety, maintains hydraulic capacity and functionality, and delays costly concrete surface repair work.

Having experienced this successfully for themselves by using Hard-Cem to enhance the erosion resistance of a concrete hydroelectric structure in Sechelt, British Columbia, MWH Global repeated the same specification for the White River hydro project. That meant using Hard-Cem in accordance with the manufacturer's instructions for all concrete exposed to running water at a standard dosage rate of 40 kg per cubic meter of concrete. The concrete itself would be Exposure Class F1 with an air content of 5% +/- 1%. In response, Lafarge established a portable silo on-site, and 240 tons of bulk Hard-Cem were transported from Kryton's manufacturing facility in Calgary, Alberta, to Lafarge's batch plant at the project site in Northern Ontario, providing the erosion resistance the White River hydro project needed.

