CYNTECH

Western Alberta Transmission Line (WATL)

Alberta, Canada

Over the course of 20 years, Alberta welcomed more than one million new residents, doubling the demand for electricity.

The project

Constructed in 2015, the $1.7 billion Western Alberta Transmission Line (WATL) was Alberta's first in-service direct current (DC) line. The 350-kilometer, 500 kV transmission line connected an area west of Edmonton to the eastern edge of Calgary.

The challenge

The owner was concerned about the potential impact of the transmission line on the oil and gas pipelines in the surrounding area. HVDC systems are often developed with ground electrodes, which allow for operation in ground current return mode. A ground electrode allows for a simpler and cost-effective design of the HVDC transmission line towers but poses the threat of undesirable impacts on infrastructure. Working under a tight construction schedule, extreme weather conditions further posed major setbacks; some areas received the largest amount of snow fall since 1939.

The solution

The HVDC line was developed with a metallic return conductor instead of ground electrodes. In order to expedite construction of the line, helicopters were utilized for tower erection and stringing the line. Cyntech designed, manufactured, and installed helical pile foundations for 137 transmission line structures.

Project facts

- 500 kV
- 350 kilometers
- Constructed in 2015
- $1.7 billion total project cost
- Cyntech designed and supplied helical piles for 137 transmission line structures

Project facts

Owner(s)
AltaLink

Keller business unit(s)
Cyntech Group

Main contractor(s)
BRT Construction Services Ltd., SNC-Lavalin

Applications
Helical pile foundations

Markets
Power

Techniques
Helical piles

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