

Hellenic Cables – Fulgor

Project : Supply and Installation of Bell Island Submarine Cable System

Client: Newfoundland Power Inc

Bell Island is situated in close proximity to the Avalon Peninsula on the east coast of the island of Newfoundland. Before the project completion, Bell Island was provided with electricity by means of four single-conductor submarine cables terminated at Broad Cove on the Avalon Peninsula of Newfoundland which run to terminations at the area known as the Old Dominion Pier on Bell Island.



Location Map

The project scope of supply was the design, supply, marine/route survey, transportation thereof to the project's location, constructions works, testing, operation (turnkey project) and delivery of two submarine lines for the connection of the Bell Islands, as well as the provision of all relevant services pertaining to the proper construction of the project.

The cable system comprises of two (2) "three conductor, 25 kV, TR-XLPE insulated, shielded, lead-covered and galvanized steel armored" submarine cables, approximately 5.600 m long crossing a 120m deep body of ocean. The cables are designed to service a 40 year forecast peak winter load of 10.4 MVA at the operating voltage of 12.47 kV and ready for future conversion to 25kV at a peak load of 20.8 MVA. A spare cable of 500m will also have been supplied.

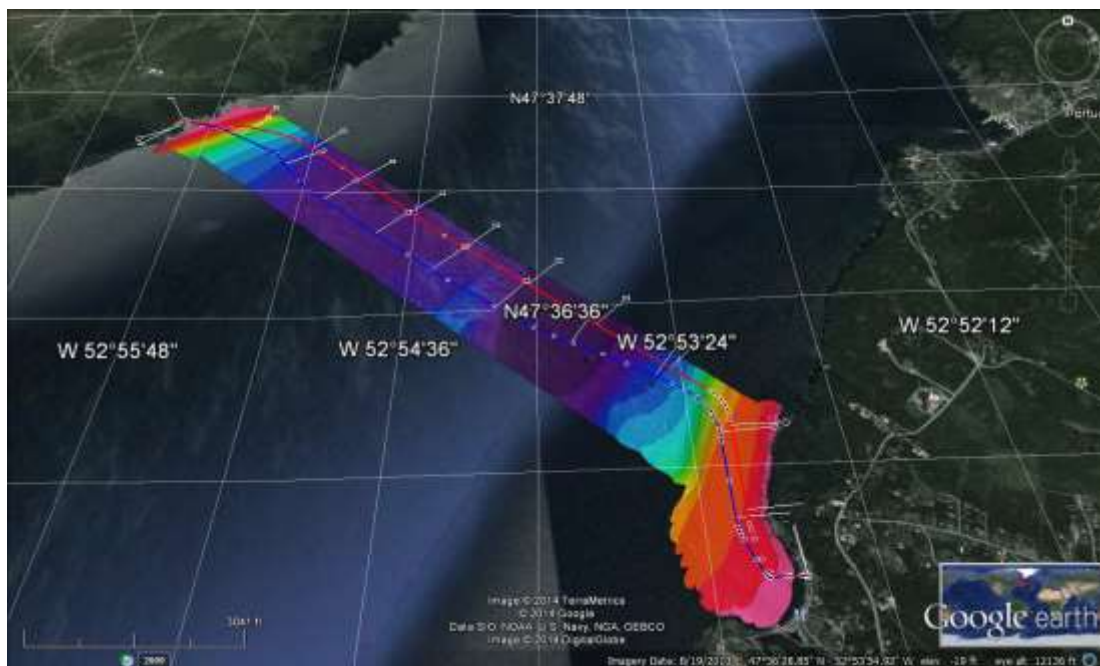
The project completion date of the project was the 11th of December 2014 and since then the cable system is in service for the power transmission needs of Bell Island.

The project has included the following main works for completion:

The design scope included:

- Marine survey
- Search for Meteorological statistical data
- On site verification of local conditions.
- Drawings of existing lines close to the installation area.
- Final route selection and cable/materials quantity finalization

We have to notice that the design of the cable system had been studied in detail during the tender phase.



Cables Route from the Marine Survey

Manufacture/Supply

The Manufacture/Supply scope included:

- Cable manufacture mobilization
- Manufacture of two (2) Three-contactor 3x300 14.4/25kv insulated submarine cables with approximately length of 5.600 m each
- Routing tests / Factory Acceptance Tests

- Loading to a transportation vessel special outfitted for the cable transportation proposes
- Delivery of cables to the Canadian Port
- Supply spare cable (500m), terminations kits (6 pcs) and splice Kits (4 pcs)



Dedicated loading line between the factory storage tanks and the port



Photograph with Cable Engine on top of the hatch cover

Installation

The installation scope included:

- Issuing the necessary working and site access permissions. Permissions have been issued from the owner leaving only the notifications
- Mobilization to the site



Loading between the transportation vessel and the installation barge

- Submarine Cable installation using an utilized Barge with DP-1 system



Floating part of the cable in the 1st landing point (Broad Cove)



Floating part of the cable in the 2nd landing point (Bell Island)

- Shoreline Trenching/Backfilling using local subcontractor with the appropriate experience in underground power cables installation projects under the supervising of the main subcontractor Maritech.
- Submarine Trenching/Backfilling.



Cable Burial (Bell Island)

- Supply and installation of Termination kits



Lifting the cable in the termination pole.

- Supply and installation of articulated Pipe protection.



Cast Iron Sells for Cable Protection (Broad Cove)

- Collection of Survey data and video/photos during or after the installation.
- After installation testing