

## Progress control in the context of the project management for the execution of a 320 kV HVDC land cable project

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### ABSTRACT

Progress control is an important management procedure for projects in the execution phase. We have introduced a new progress control method to the installation of a 320 kV HVDC land cable project. This paper describes the implemented progress control method and its phases. This procedure proved to be important to clarify many project aspects for management decisions in order to reduce or avoid extra costs and time

### DESCRIPTION

The approx. 92 km of land cable installation project belongs to the DolWin2 cluster connection scope and it is situated between the platform DolWin beta and the substation Dörpen West, as shown in Figure 1.



Fig. 1: Route of the land cable installation

The cable route (cable type extruded DC 2400 mm<sup>2</sup> Al – see Figure 2) was divided into 117 sections of approx. 800 m length and 116 joint bays, respectively 232 joints (joint prefabricated one-piece type), whereby almost each fourth joint was used as earth point. According to the cross-section requirements shown in the Figure 3, the cables should have a minimal distance of 5 meters from other cable systems, a minimal distance of approx. 40 cm between the positive and negative polarity and a burial depth of approx. 1.3 meters. Therefore the cable achieved total losses of 30.7 W/m with a ground thermal resistivity of 1 K\*m/W for a maximal current of 1451 A.

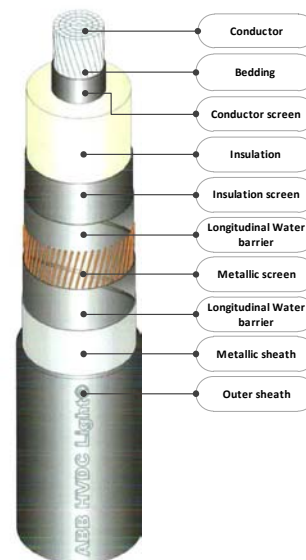


Fig. 2: ABB HVDC Cable 2400 mm<sup>2</sup> Al

The installation was performed by a subcontractor and ABB was responsible for the turnkey management as a general contractor. The project installation management was delivered by ABB, where the remaining 81 km of the cable route with 103 sections and 102 joint bays had to be installed between early April and the end of August 2014.

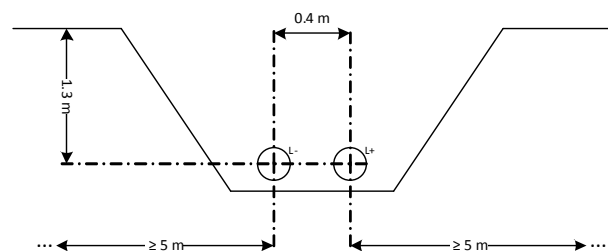


Fig. 3: Land cable cross-section requirements

In addition 27 sections were situated in bird protection areas (BPA) and had to be executed within 2 months in order to not exceed the project deadline at the end of August 2014.

For this reason it was decided to use a progress controlling method for the remaining work. All activities were comprised into mainly 2 phases, which are: planning phase and execution phase. The phases were specially developed to resume the site activity representation systematically and reliably. Using this methodology it was