A.10.2.

Mechanical laying of HDPE ducts in rural area

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The agreement between the French Government and RTE (called " Power Electrical Networks and Environment ") for the period 2001 – 2003 stated that 25 % of the new 63 and 90 kV electrical lines should be buried, mainly in urban areas and areas of special interest. However, the cost of the underground lines remains high. Moreover, the use of the public roads can lead to some technical problems: over-length of cables, difficulties due to other networks, constraints of traffic on the working site,…

In order to develop the laying of cables in the private land (essentially in rural area), and in order to reduce the constraints of traffic during the works, RTE has developed an innovative technique which allows to get the acceptance of the route by the public more easily: the mechanical laying of HDPE (High Density Poly Ethylene) ducts.

This technique, directly taken from the laying of telecommunication cables, consists in opening the trench and simultaneously laying the three ducts for power cables, as well as their backfill. Therefore, the laying "train" is composed of a drum carrier for the ducts, a trenchdigger and a cubicle tray to position the ducts in the excavation. The power cables are pulled in a second stage.

The paper will present a precise description of these operations and will introduce the advantages of the innovative technique in comparison with the traditional ones: reduction of costs, reduction of trench size, reduction of work duration, reduction of damages, backfilling with existing soils,…

The paper will also examine the limits of the technique: importance of the quality of the soils, difficulties with other existing networks,..and will be supported by the real example of a 63 kV underground line built in 2002 with this technique.