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### **B.1.1.**

New medium voltage cable used in France and improvement on laying technics.

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The 20 kV synthetic cable on the French distribution network has an excellent experience feedback ; The very innovative design at the introduction of this cable on the network, has barely changed during 20 years of operation. Meanwhile, significant improvements of the synthetic insulation from the material point of view as well as on the industrial process, have led to an extension of this technology to the highest voltage levels and to the development of more efficient accessories. Due to these technical achievements, EDF and the manufacturers of this product have considered that its optimisation was possible.

The chosen way to directly draw benefit from progress of the synthetic insulation was to reduce the insulation thickness of the cables from 5.5 mm to 4.5 mm. These optimised cables were developed, and the corresponding connection accessories were also adapted. Since March 2000, Electricité de France, provisions exclusively this cable so named "Câble 2000" and this has allowed a sensible reduction of the cost of 20 kV underground cables.

As a second step, the descriptive specification as been replaced by a more functional one. The concept of the unique model of MV cable in France is now withdrawn. PE outersheath and non strippable semi conductor are now used by some manufacturers. Electricité de France provisions this cable since July 2002. This second step has allowed another sensible reduction of the cost of 20 kV underground cables.

At the same time, EDF undertakes actions in order to improve laying techniques of MV cable. In particular solutions for cable mechanical protection leading to suppress the use of sand under and around the cable have been studied or are under consideration. Investigations carried out will allow to complete the functional specification. Solutions could be rapidly used on site as a part of rebuilding of MV network.