

**A4.4****Cable laying : State of art for the laying of HV and EHV cable systems**

MAUGAIN Y., EDF Production Transport, Courbevoie, France

HUDSON P., Pirelli Construction, Eastleigh, Hampshire, United Kingdom

**Résumé**

La CIGRE a lancé un groupe de travail au sein de son comité 21 "Câbles Souterrains" pour examiner les différentes techniques de pose et les paramètres de calcul nécessaires à l'installation des systèmes de câble à haute et très haute tension. A partir d'une enquête internationale réalisée par le groupe, il a été possible de dégager une vision de l'état de l'art en 1998 et les tendances futures sur la manière la plus adéquate de construire les lignes souterraines.

**Abstract**

CIGRE launched a working group within its committee 21 "Underground Cables" to examine the different laying methods and the calculations parameters necessary for the high voltage and extra high voltage cable systems installation. From an international inquiry carried out by the group, it has been possible to present the state of art in 1998 and the future trends for the most effective way of constructing underground links.

**INTRODUCTION**

In 1996, the Study Committee 21 decided to launch a new Working Group with the title « Laying and Installation Techniques for High Voltage Cable Systems ».

The terms of reference are :

To review the different laying methods for high voltage cable systems and to compare their relative merits, to review possible innovations and give recommendations for the application of new technologies.

To review the calculations parameters necessary for the design and to recommend simplified methods for the calculation of the different cable laying design parameters.

This Working Group is comprised of 16 countries<sup>1</sup>. It will produce a final report in 2000 which will be published later as a technical brochure.

<sup>1</sup> J.P.M. ANTONISSEN (The Netherlands), P. ARGAUT (France), R. AWAD (Canada), T. FAGERENG (Norway), M. GENOVESI (Italy), A. GILLE (Belgium), P. HUDSON (United Kingdom) (Secretary), R. JOHNSTON (Australia), G. KATSUTA (Japan), K. LAGERSTEDT

The scope of work is related to terrestrial extruded or SCFF (Self Contained Fluid Filled) cables.

The Working Group has sent two questionnaires in December 1997 to Utilities (46 replies from 22 countries) and Cable manufacturers (27 replies from 16 countries). The Group expresses their sincere thanks as they contributed effectively by giving part of their time and defining the state of art in their countries. This article focuses on what the Group consider the most significant.

**Brief summary of the results**

Throughout the world, utilities lay more extruded cables than SCFF ones, 93 % of them laying extruded cables against 46 % SCFF.

Twelve different existing installation techniques were identified : they are detailed in the corresponding sections. Among them, only three are commonly used , (i.e. mentioned by more than

(Denmark), H.S. LEE (South Korea), Y. MAUGAIN (France) (Convenor), M. PORTILLO (Spain), T. J. RODENBAUGH (United States), F.RÜTER (Sweden), R. SAMICO (Brazil), R. SCHROTH (Germany).