



Study Committee No : B1

WORKING BODY FORM

Group No : WG B1.27

Name of Convener : Anders Gustafsson (SE)

TITLE of the Working Group : Recommendations for testing of long AC submarine cables with extruded insulation for system voltage above 150 (170) kV to 500 (550) kV

Background:

For a long time the prevailing highest voltage for XLPE submarine AC cables was 170 kV. A recent submarine installation of single-core XLPE AC cables at 420 kV has moved the technology forward significantly. The existing Recommendations on AC submarine cables are presently limited to 170 kV.

It is considered necessary to prepare test recommendations on XLPE AC submarine cables from 170 kV to 500 kV.

Terms of Reference:

- Examination of relevant IEC standards / CIGRE recommendations and documentation.
- The work should adopt a system approach. Particular attention should be paid to repair joints as part of the sub-marine cable system and the Working Group should consider tests with external water pressure, heat cycling and mechanical handling (during installation of a repair joint).
- The work should propose development and prequalification tests for the EHV submarine cable system and re-qualification in case of minor or major changes and define the range of prequalification and type approval for EHV submarine cable systems.
- The work should propose tests for long submarine cable lengths - both in the factory and after installation and explain clearly the basis for the recommended tests and the range of application.
- The work should include a review of the currently available technologies for sub-marine cable and joint design and consider possible implications for testing
- A Technical Brochure should be prepared for publication

A recommendation should be prepared to Cigré B1 on the revision of "Recommendations for testing of long AC submarine cables with extruded insulation for system voltage above 30 (36) to 150 (170) kV". This review should be performed based on the new edition of IEC 60840.

Deliverables:

- The Working Group should prepare a Technical Brochure and a tutorial.
- Recommendation for revision of "Recommendation for testing of long AC submarine cables with extruded insulation for system voltage above 30 (36) to 150 (170)kV"

Created: **2007** Duration : **3 years**

Members : Canada, Denmark, France, Ireland, Italy, Japan, Netherlands, Norway, Spain, Sweden

Approval by TC Chairman : Klaus Fröhlich

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