



WETS'07 WORKSHOP
World Energy Transmission System

Achievement and experience in service of long length (> 10 km) HV, EHV electrical links by AC insulated power cables.

I. Characteristics

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Thursday June 28 2007



Submarine cables, > 10 km route length

SCFF

15

MI

10

XLPE

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Oslo fjord III crossing

- 420 kV, 870 MW
- East side 800 mm², west side 1300 mm²
- 6x8 km + 6x3,2 km back-to-back SF6 termination as joint
- Twelve in-house condenser cone terminations
- Depth east side 300 m, west side 30 m
- East side laid on bottom, west side buried 2m depth
- Fluid feeding system: large number of high pressure tanks
- Laid: 1981
- Experience:
 - Some initial SF6 leakage

Skagerrak crossing

- 250 kV, 250 MW
- Submarine 800 mm², land 1000 mm²
- 2x121 km, 2x3km land cable 21 factory joints, 18 repair joints, 4 transient joints, 2 land cable joint
- DTS and DRS system installed on one side
- Four in-house condenser cone terminations, pressurized
- Depth 550 m
- Initially not buried, later buried, 0,5 – 1 m
- Laid: 1976/77
- Experience:
 - Nine mechanical damage and repairs before burial

Troll feeding system

- 52 kV, 17 MW
- Submarine 3x1x240 mm²,
- 67 km, 5x3 factory joints
- Six in-house stress cone terminations
- Depth 350 m
- Buried, 1 m in soft bottom, stone dumped on rocky bottom
- Four pipe line crossings
- Pull-in into 100 m horizontal and 400 m vertical J-tube
- Laid: 1995
- Experience:
 - No negative experience to present