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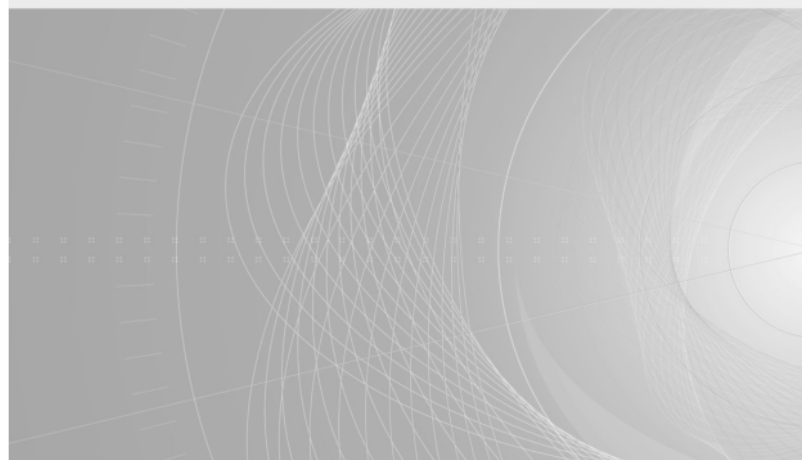
# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



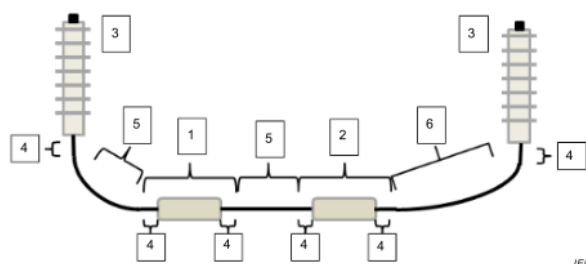
**High voltage direct current (HVDC) power transmission – Cables with extruded insulation and their accessories for rated voltages up to 320 kV for land applications – Test methods and requirements**

**Câbles haute tension en courant continu (CCHT) – Câbles d'énergie à isolation extrudée et leurs accessoires pour des tensions assignées jusqu'à 320 kV pour les applications terrestres – Méthodes et exigences d'essai**



length and allocation of failure between cable and accessory, should this occur. The return cable is referred to in Annex I.

A possible configuration of test objects in a test loop is shown in Figure 1. Special definitions are described hereafter.



#### Key

- 1 Test object joint
- 2 Optional, one or more additional test objects
- 3 Test object termination (may be of different design)
- 4 0,5 m cable next to the accessory is deemed to be part of the accessory
- 5 Minimum 5 m cable between the accessories
- 6 Test object cable: min. 10 m

Figure 1 – Example of configuration of test objects within a test loop

### 8.2 Test voltages

$U_T$  is the DC voltage during the type test and routine test. For the scope of this standard  $U_T = 1,85 U_0$ .

$U_{TP1}$  is the DC voltage during the PQ test (heating cycle test), type test (polarity reversal test) and test after installation. For the scope of this standard  $U_{TP1} = 1,45 U_0$ .

$U_{TP2}$  is the DC voltage during the PQ polarity reversal test. For the scope of this standard  $U_{TP2} = 1,25 U_0$ .

$U_{P1}$  is, for the type test,  $1,15 \times$  the maximum absolute peak value (Figure 2) of the lightning impulse voltage, which the cable system can experience when the impulse has the opposite polarity to the actual DC voltage. For the PQ test,  $U_{P1} = 2,1 U_0$ , if required.

$U_{P2,S}$  is  $1,15 \times$  the maximum absolute peak value (Figure 2) of the switching impulse voltage, which the cable system can experience when the impulse has the same polarity as the actual DC voltage.

$U_{P2,O}$  is, for the type test,  $1,15 \times$  the maximum absolute peak value (Figure 2) of the switching impulse voltage which the cable system can experience when the impulse has the opposite polarity to the actual DC voltage.

For the PQ test,  $U_{P2,O} = 1,2 U_0$ .

$U_{RC,AC}$  is the maximum peak voltage a return cable can be subjected to due to temporary damped alternating overvoltage. This voltage is typically induced by a commutation failure, and the value should be supported by the customer.

$U_{RC,DC}$  is the maximum DC voltage in normal operation of the return cable.