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Author's Response

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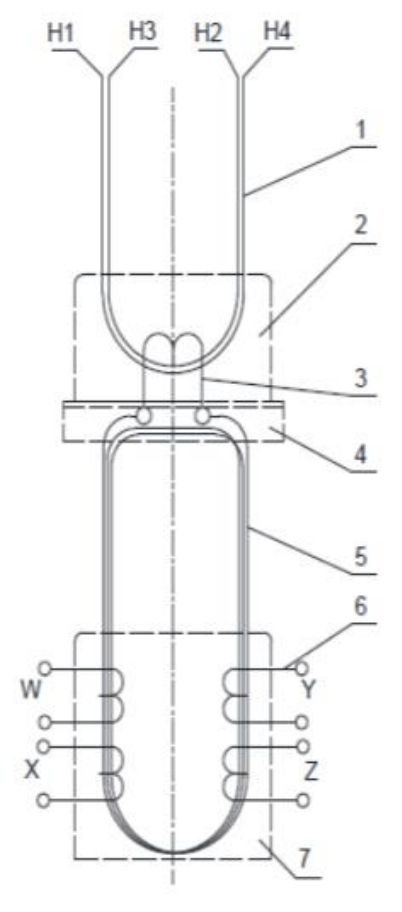
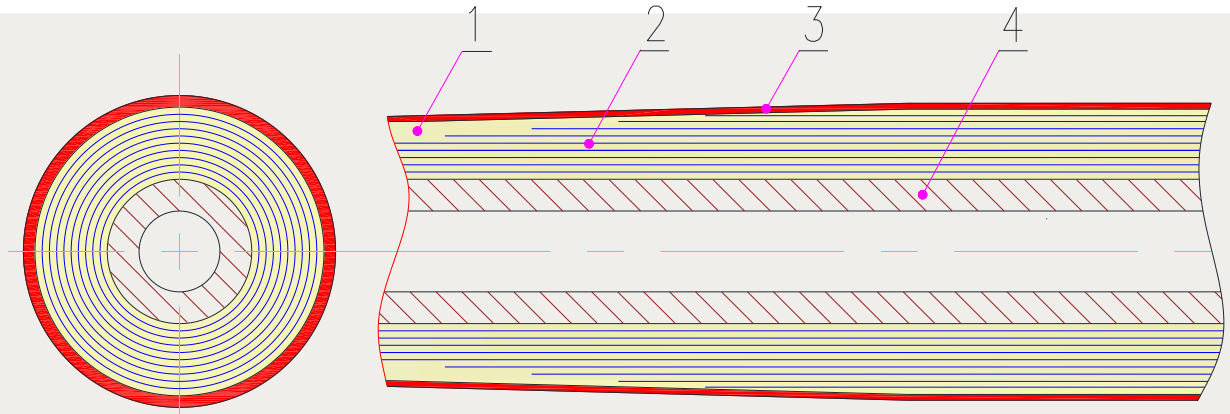
Robert Middleton USA
RHM International

The Cascade Design HV DryShield® CT



1 – Upper CT; 2 – Upper primary winding; 3 – Upper secondary winding; 4 – Duct board; 5 – Lower CT; 6 – Lower primary winding; 7 – Lower secondary winding

500 kV nominal
600 kV MCOV
4000 x 2000 A re-connectable primary
4 – 5 A secondary cores each rated 10L800 and 0.3B1.8 (on max. tap)
Built to CAN/CSA-C61869-1 & 2:14



Sectional View of the CT Primary Winding

1- PTFE insulation
2- Aluminum foil screens
3- heat shrink tube
4- current carrying conductor

- The cascade design HV DryShield® CT described in our paper uses a composite insulation technology that consists of PTFE (PolyTetraFluoroEthylene) film layers with interstitial silicone gel for its primary conductor insulation.

- The PTFE tape used in the design offers remarkable electrical, thermal, and chemical stability over a wide range of frequencies and temperatures. IEC 60085 gives the ATE (Absolute Thermal Endurance) or RTE (Relative Thermal Endurance) of PTFE as ≥250°C and <275°C.

- For design purposes and to conform to industry standards the HV DryShield® CT design was assigned a Class B (85 K) temperature rise limit.

- Temperature rise type test results for the 500 kV cascade design HV DryShield® CT.

Winding Terminal Temperature Rise (K)	Windings Temperature Rise (K)	
H1: 57.2 H2: 57.5	X1-X5	5.78
	Y1-Y5	8.29
	H1-H2	83.8
Result: Passed		