



Study Committee A2

Working Group Form

WG A2.35	Name of convenor: Russell Martin/UK
Title of the task force: Experiences in service with new liquids	
Context Since the seventies, new fluids have been used to replace PCB, mainly in small distribution transformers. In the eighties, the same type of fluids have been used to improve the physical (thermal, di-electrical) or/and the environmental performances and other safety issues of all type of power transformers. In some applications, the new fluids are combined with new solid insulating materials. Such applications are now defined in new standards like IEC 60076-14-2004. IEC TC 14 has shown an interest to consider the results which will be obtained by the WG A2.35 in the maintenance of the existing standard.	
Scope and aim The aim is to collate and review the in-service experience of using the new fluids in a way which is relevant and beneficial to the electrical industry. The new fluids concerned here are mainly: Ester fluid (synthetic and natural) Silicone fluid The scope shall cover the following areas: Basic properties: Physical and chemical and electrical differences between the new fluids and mineral oil. Fire safety. Toxicity. Environmental. Moisture tolerance. Oxygen stability. Electrical performance. Fluid aging Design considerations: How the use of the alternative fluids impinges on equipment design Corrosive sulfur : Corrosive sulfur should not be an issue with the new fluids. It may be instructive to explain this, and check this whether this is reflected in field experience to date Applications : Gather and review in service uses of the new fluids. Where and how used. Power and distribution transformers. Review in-service concerns/needs. In service fluid use: Maintenance. Retrofilling, Handling /Precautions. Review relevance of in service tests to the new fluids as opposed to mineral oil eg acid values/tan delta. Reliability and longevity. Experiences of these new fluids with cellulose, Aramid and other solid insulations Standards: Review what standards exist for these fluids, highlight deficiencies, propose remedies (to be done by other groups). Further work: From the above identify the knowledge gaps/concerns and propose solutions, or work for other groups.	
Deliverables/time schedule <ul style="list-style-type: none">- January 2007: Starting of the Working Group- Mid 2009 : Final Report , TB, Electra	
Papers issued:	
Approved by TC chairman Klaus Fröhlich Date: Nov. 22nd, 2006	