10.6 Insulating Fluids Subcommittee – F. J. Gryszkiewicz, Chair; R.K. Ladroga, Vice-Chair

10.6.1 Introduction/Attendance

The Insulating Fluids Subcommittee met in Jackson, Mississippi on Wednesday, March 16, 2005 with 17 members and 19 guests present. Four guests requested membership on the Subcommittee.

10.6.2 Approval of Meeting Minutes

The Minutes of the Las Vegas meeting were approved as written.

10.6.3 Subcommittee Membership

There were no changes to report in the Subcommittee Roster.

10.6.4 Current Subcommittee Business

10.6.4.1 C57.104 – IEEE Guide for the Interpretation of Gases Generated in Oil – Immersed Transformers

This Working Group is Chaired by Frank Heinrichs. A Standards Association Ballot was recently conducted on Draft 11D. Sixteen negative ballots were received. The Working Group, previously, had agreed to participate with IEEE Headquarters in an experimental procedure where negative ballots will be resolved or rebutted via a website based and teleconferencing procedure.

A ballot resolution team is attempting to resolve the negative ballots. This will be followed by a Recirculation Ballot. The Subcommittee plans to submit this document to REVCOM this summer.

10.6.4.2 C57.106 – IEEE Guide for Acceptance and Maintenance of Insulating Oil in Equipment

Jim Thompson and T.V. Oommen are the Co-Chairs of this Working Group. The Working Group met on Tuesday, March 15, with 4 members and 34 guests in attendance.

As required in the IEEE Standards Board By-law, Section 6.3.2, the IEEE patent disclosure requirements were discussed and a request was made for disclosure of any patents that may be related to the work of the Working Group. There were no responses to the request for disclosure.

The WG Chair, Jim Thompson, opened the meeting and briefly reviewed the revision of Section 4.5 and Table 7. The rewrite of Section 4.5 had been approved at the previous meeting in Las Vegas. The revision to Table 7 was discussed with regard to consensus moisture values, including a footnote, which was added as a caution in using these values.

The guide will be sent out for a Standards Association Ballot before the next meeting in Memphis.

10.6.4.3 C57.130 – Trial Use Guide for the Use of Dissolved Gas Analysis During Factory Temperature Rise Tests for the Evaluation of Oil- Immersed Transformers and Reactors

This Working Group is Co-Chaired by Frank Heinrichs and Frank Gryszkiewicz. A Standards Association Recirculation Ballot was recently conducted on Draft 15 of this document. A total of six negative ballots were received. Two were new negative ballots and four were unresolved negatives from the Draft 14 Ballot. An attempt will be made to resolve the negative ballots and another Recirculation Ballot will be conducted.

The Subcommittee plans to submit this document to REVCOM this summer.

10.6.4.4C57.139 – IEEE Guide for Dissolved Gas Analysis of Load Tap Changers

The Working Group, which is chaired by Fredi Jakob, met on Tuesday, March 15, with 23 members and 20 guests in attendance. The following three guests requested membership on the Working Group:

Mark Perkins
Craig Stiegemeier
Brent Hayman

As required in the IEEE Standards Board By-law, Section 6.3.2, the IEEE patent disclosure requirements were discussed and a request was made for disclosure of any patents that may be related to the work of the Working Group. There were no responses to the request for disclosure.

In the past, the Working Group had a difficult time agreeing on dissolved gas analysis (DGA) limits for the different design load tap changers. In view of the foregoing, it was decided to use "generic limits" of the combustible gases of interest for the various design types of load tap changers. A Task Force has been assigned to develop a generic description of each LTC.

Absolute values and ratios of the various combustible gases would be used in determining whether the DGA data is indicative of a tap changer problem. The ratios discussed were Ethylene/Acetylene, Ethane/Methane, and Ethylene/Ethane. The Ethylene/Acetylene ratio appears to be the most meaningful of the three ratios.

The Working Group reviewed Draft 7 at their meeting. The Working Group's DGA database is manufacturer specific. Since IEEE bylaws do not permit categorizing tap changers by manufacturer, a Tank Force has been formed to look at the DGA database and will attempt to write up parallel descriptions of the LTC. This will allow the Guide user to be able to identify a particular manufacturer's tap changer without actually naming the specific tap changer.

The Guide will have the following three categories for the DGA results:

A. Normal
B. Caution
C. Warning

The Working Group needs to define the three categories.

The comments received at the WG meeting in Jackson will be incorporated into Draft 8 which will be discussed at the next meeting in Memphis.

10.6.4.5C57.146 – IEEE Guide for the Interpretation of Gases Generated in Silicone Immersed Transformers

This document previously carried the IEEE designation P1258. This has been changed to the IEEE designation C57.146 to be consistent with the other standards in the C57 collection.

Jim Goudie and Bill Bartley are the Working Group Co-Chairs of this project. A Standards Association Ballot was recently conducted. Two negative ballot was received. A Recirculation Ballot is now in progress. The Subcommittee expects to send the document to the IEEE Standards Board for approval after completion of the Recirculation Ballot.

10.6.4.6 C57.147 – IEEE Guide for the Acceptance and Maintenance of Natural Ester Based Fluids

Patrick McShane is the Working Group Chair. Clair Claiborne is the Working Group Co-Chair. The Working Group met on Tuesday, March 15, with 19 members and 42 guests in attendance. The following five guests requested membership on the Working Group:

A. Joe Kelly
B. Rick Ladroga
C. Ray Nicholas
D. Dave Blew
E. Juan Castellanos

The Working Group meeting was then called to order by the WG Chair, Patrick McShane. As required in the IEEE Standards Board By-law, Section 6.3.2, the IEEE patent disclosure requirements were discussed and a request was made for disclosure of any patents that may be related to the work of the Working Group. There were no responses to the request for disclosure.

The Working Group reviewed Draft 5.3 at their meeting. Most discussions were based on the tests and test values contained in Tables 2, 3 and 4. These tables are as follows:

A. Table 2 – Acceptable values for receipt of bulk shipments of natural ester fluids
B. Table 3 – Test limits for new natural ester fluids received in new equipment, below 230 kV, prior to energization
C. Table 4 – Suggested limits for continued use of service-aged natural ester fluids (grouped by voltage class)

The comments received will be incorporated into Draft 6 which will be sent to the Working Group and Fluids Subcommittee for a straw ballot.

10.6.5 Adjournment

The Subcommittee adjourned at 12:00 noon.

10.6.6 Next Meeting

The Insulating Fluids Subcommittee and its Working Groups will next meet in Memphis, Tennessee during the period of October 23-27, 2005.