MINUTES OF THE MEETING OF THE HVDC CONVERTER TRANSFORMERS & SMOOTHING REACTORS S.C. IN JACKSON, MISSISSIPPI, MAR. 21, 2005

The S.C. met in the Amphitheater 1 Meeting Room of the Hilton Jackson Hotel in Jackson, Mississippi on Mar. 14, 2005 from 1:45 p.m. to 3:00 p.m. There were 11 members and 6 guests present. The following are the highlights of the meeting.

1. The minutes of the S.C. meeting in Las Vegas were approved. The minutes of the Jackson meeting will not be approved until the S.C. meets in Memphis, Tennessee.

2. IEEE patent policy was reviewed; details are available at the Transformers Committee website. No patents affecting the revision process of IEEE C57.129 were noted.

3. The Chairman reported on the meeting of the Administrative S.C.

4. The Chairman informed S.C. attendees that the current version of IEEE 1277 (smoothing reactors for HVDC application) will reach its end of life Dec. 31, 2005; reaffirm or revise (PAR). It was decided that the action should be to revise IEEE 1277. The Chairman will apply for a PAR. Input from the revision process of IEEE C57.129 and the revision of IEC 60076-6 (reactors; including smoothing reactors) will be taken into consideration.

5. Plans are in process for the S.C. to sponsor a tutorial session in sound at the Memphis meeting. The focus will be sound generation mechanism and measurement for transformers and reactors; including converter transformers smoothing reactors (oil-immersed and dry-type) and filter reactors.

6. Draft #3 of the revision of IEEE C57.129, prepared by RFD was discussed. The highlights are as follows.

   (i) Lars-Erik Juhlin's input/revision of ANNEX E was deemed to be very good. This annex is now essentially complete.

   (ii) Acceptable levels of gassing during the overload test were discussed. It was agreed that gas monitoring should be part of the overload test. Gas evolution data from overload testing of converter transformers plus data from testing of standard power transformers will be evaluated to arrive at acceptable/consensus levels of gassing for the overload testing of converter transformers. The inclusion of "non detectable" levels should not be a criteria but less than a minimum level is acceptable criteria. Peter Heinzig and Christoph Ploetner will prepare a new draft table of acceptable levels of gassing, based on previous drafts plus any data

available from sources in their company, and they will circulate to Pierre Riffon, Les Reckseidler, Waldemar Ziomek, Lars-Erik Juhlin and Sten Andersson for input/modification. The objective is to arrive at consensus and RFD will include the results in Draft #4.

(iii) The recently completed IEC application guide for HVDC converter transformers will be included in the References.

7. Les Reckseidler made a presentation on the analysis of converter transformer failures occurring on Manitoba Hydro's two bipoles. Some key observations included; tap lead problem masked other problems, failures were not always preceded by gas evolution, overload testing in the factory may be beneficial, design review can identify potential problems. This analysis of these converter transformer failures by Manitoba Hydro provided the basis for some of Les' input into the revision process for IEEE C57.129. Copies of Les' presentation will be e-mailed with the minutes to S.C. members ONLY and are to be used ONLY in conjunction with the revision process of IEEE C57.129.

The Chairman promised to produce Draft #4 prior to the Memphis meeting. The meeting adjourned at 3:00 p.m.

R. Dudley

RFD:jl
(0573)