

“AUDIBLE SOUND AND VIBRATIONS” SC

Meeting Minutes

Miami, FL

April 22, 2009

Chairman: Jeewan Puri

The Sub Committee met on Wednesday, April 22, 2009 with 13 members and 16 guests present. After introductions and chairman’s remarks, the participants discussed the following issues:

WG Report – Jeewan Puri: It was pointed out that the PAR C57.151 for writing sound level measurement guide will expire in Dec. 2009. J. Puri will apply for extension of this par.

The WG started the review of the proposals made by Ramsis Girgis regarding the revision of Section 13 of IEEE Standard C57.12.90 and C57.12.91. Based on the work done by him and his colleagues, he proposed the following:

1. The presently used sound pressure measurements are over stated due to errors introduced by
 - Near Field effects (0 to 2 dB)
 - Ambient Noise (0 to 2 dB)
 - Wall Reflections (1 – 2.5dB)It was proposed that correction for wall reflections should also be allowed.
2. Ramsis reviewed the extensive work that he and his colleagues have done in measuring sound intensity using discrete frequency measurement technique. This method improves the accuracy of sound intensity measurements as compared to commonly used dB A measurements. This method is particularly useful when making measurements on transformers with low sound level guarantees. He pointed out that for making sound intensity measurements with the acceptable accuracy the following sound pressure(L_p) and sound intensity (L_i) level difference limits should be used:
 - $(L_p - L_i) < 5\text{dB}$ - for discrete frequency measurements.
 - $(L_p - L_i) < 6\text{dB}$ - for dB A measurements.Based on the measurement data presented, it was agreed that these limits should be accepted.
3. It was agreed that it was agreed that a note should be added in this section pointing out the enhanced accuracy of far field dB A sound level calculations using discrete frequency sound intensity measurements.
4. It was agreed that the discussion on modifications to Section 13 proposed by Ramsis and his colleagues will continue in our next meeting.

Revision of C57.12.90 Section 13: Ramsis reviewed the work presented in the WG with the SC.

It was pointed out the sound emitted from the transformer covers could be a significant influence for people living in high-rise buildings. Sound emission from the covers of transformers with gas cushions versus transformers provided with conservator type oil preservation systems was discussed.

It was also pointed out that the reflection coefficients for different frequency noise levels are not the same. This could be a source of error in computing sound level correction for sound level measurements.

It was agreed that these issues produce only secondary influences on sound level measurements and should be discussed in the sound level measurement guide.

Next draft of Sound Abatement Guide C57.136 – Allen Darwin: Allen reported that this guide will be due for revision in 2010. This work will be done only after Section 13 of the test standards have been modified.

There being no new business, the meeting adjourned at 9:15 am.

Jeewan Puri
Chairman - ASVSC