

Hello Rick:

In keeping with my promise at the IEEE Transformer Committee meetings in Las Vegas, I am attaching some materials on 3rd and other harmonics relative to the working group to revise C57.110. My friends at Power Quality International have provided several papers that give good insights. You will see that they like to use phase shifts to cancel harmonics instead of inserting mass and cooling capacity in the transformers to tolerate their affects. It is also worth mentioning that Power Quality International is mostly involved with Low Voltage Equipment. Although this is the case, I view the technology of harmonics as independent of voltage class, and find their submissions to be quite relevant.

I have also attached a paper that I wrote while working for Square D on my loading study at the Square D Monroe plant. This paper has been presented all over the industry for many years and can be considered to be a public document. From this study, we observed very light loading on the Low Voltage Transformers (typically under 20% of nameplate in the Summer and 35% in the Winter from the use of spaceheaters. We also saw equivalent light load at the Main DOE Forrestall Building in Washington, DC, with aggregate total of around 30% of nameplate on the 81 Low Voltage Dry Type Transformers. An independent study by Northeast Utilities in Massachusetts also measured very light loads of around 15% of nameplate

These materials should provide good food for thought.

Best regards,

Phil  
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-----Original Message-----

From: Gregory Ferguson [mailto:gferguson@powerqualityinternational.com]  
Sent: Tuesday, November 30, 2004 6:40 PM  
To: 'Phil Hopkinson'  
Cc: 'Doug Dayton'  
Subject: RE: Contact Info

Phil:

Attached please find some technical information that we believe addresses shortcomings with IEEE C57.110. I'll send additional information tomorrow.

Best regards,  
Greg

-----Original Message-----

From: Phil Hopkinson [mailto:phopkinson@hvolt.com]  
Sent: Tuesday, November 30, 2004 2:59 PM  
To: Greg Ferguson  
Cc: Doug Dayton  
Subject: Contact Info

Hi Greg and Doug:

I enjoyed talking to you both this afternoon and look forward to meeting with Alexander, introducing him to the IEEE Transformers Committee, and receiving harmonic materials from you for the C57.110 Working Group.

Thanks in advance,

Phil

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