

Weeraphong Yaemsraso 2009: Study and Analysis of Harmonic Sources of Buildings in Kasetsart University (Bang Khen Campus). Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Associate Professor Kiatiyuth Kveeyam, Ph.D. 143 pages.

Nowadays, nonlinear single phase loads are utilized and tend to be increased by without harmonic quantity supervision. There are harmonic sources in power system. For this reason, the harmonic sources education in power system, by measure of harmonic content in a different type of buildings at Kasetsart University, Bang Khen Campus. From example area, equipments are classified in 4 groups. Room offices each types, room offices and other room (collaborative utilizable), computers center, lecture room and laboratory room.

The case study shows that equipments sterilizes room, blood test room and emergency room have total current harmonic distortion( $THD_I$ ), not exceed the limitation of even balanced and unbalanced phase, because most the equipment are linear type. For the lecture rooms of 100, 200, 300 seats, teacher offices and general office, such as pet's medical examination, administrative section, it was found unbalanced which some phase have the value  $\%THD_I$  exceeded the limitation. The adjustment of the load to balance is applied. For the others, even though it is balanced, but still has the  $\%THD_I$  exceed, especially computer center, the installation of filter is necessary. The problem and result is mentioned in this study.

---

Student's signature

---

Thesis Advisor's signature

\_\_\_ / \_\_\_ / \_\_\_