TAVATCHAI PICHIDCHAIKUL : DEVELOPMENT OF THE CIGRE LIGHTNING FLASH COUNTER. THESIS ADVISERS : ASSO.PROF.SAMRUAY SANGKASAAD, Dr. Sc.techn. AND ASSO.PROF.NARONG YOOTHANOM, Ph.D., 109 pp.

This thesis presents the study and development of a lightning flash counter for counting local ground flashes. The counter consists of four circuits, namely, antenna, band pass filter, threshold setting and register circuits. The counter was designed in accordance with the CIGRE 10 KHz lightning flash counter. The characteristics and performance of the counter were tested. The frequency response and sensitivity of the counter are compared with the CIGRE specifications. Fffective range of the counter is obtained by setting the threshold voltage of the counter in accordance with the CIGREs' recommendation. The average ground flash density was carried out by using 10 counters during the rainy season of 1990 in Chonburi and Rayong regions. The evaluated densities are compared with annual thunderstorm days, region of latitude and rainfall.

A comparison of the number of lightning flashes was made between the measured values obtained from the designed counter and the CIGRE counter by installing both counters on the top of sixth floor of the Electrical Engineering building at Faculty of Engineering, Chulalongkorn University, it was found that the maximum counting ratio of those data from the CIGRE counter to those from the designed one was 1.8