CHAPTER 5

CONCLUSION AND FURTHER WORK

5.1 Conclusions

The outcomes of this study indicate that, the ANSI C29.1 and Amendment1 IEEE4 Std 4a: 2001 correction procedure are more suitable than the IEC 60060-1: 1989. From the experimental results we can summarize as follows:

1. The flashover voltage increases with humidity in the range $15g/m^3 < h/\delta \leq 25g/m^3$.
2. The applicability of humidity correction factor for lightning impulse and AC voltage test, that is recommended by standard of high voltage tests technique:
    a. It can be seen that positive lightning impulse voltage corrected as recommended by IEC 60060-1: 1989 and IEEE4: 1995 decreases with humidity in the range of $15g/m^3$ to $25g/m^3$ because the humidity correction can be used only in a range of h/δ between $1g/m^3$ to $15g/m^3$. However, the humidity correction still valid for negative lightning impulse.
    b. The humidity correction factor recommend by ANSI C29.1: 1988 and Amendment1 IEEE4 Std 4a: 2001, is applicable for atmospheric conditions in Thailand. But for the flashover voltage of negative lightning impulse, the validity of Amendment1 IEEE4 Std 4a: 2001 can not evaluated, because the testing data is not enough.
    c. Except for negative lightning impulse voltage, the humidity correction factor recommend by IEC 60060-1: 1989 is not appropriate for $h/\delta > 15g/m^3$. Thus, a new correction factor for positive lightning impulse and AC flashover voltage test on Pin-post and Line-post insulator is required for IEC 60060-1: 1989.

5.2 Further Work

Further studies are necessary to obtain more accurate analysis. These studies include:

1. For negative lightning impulse, more testing data under atmospheric conditions are required, especially for line-post and pin-post class 57-4 and 56/57-4.
2. Compare the test results at high h/δ from this studies with the test results from other HV Laboratory.

APPENDICES