Thesis Title	The Application of Microsolt Excel for Calculation the Optimization of Power Loss in 115 kV Transmission Line System of the East Zone of Northeastern EGAT's System.
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Candidate	Mr.Harnchoke Butwiengpun
Supervisors	Assoc. Professor Dr.Sumalee Chanchalor
	Mr. Jittipat Triyanggulsri
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Abstract

The purposes of this study was to applied the program to calculate the power loss of 115 kV. High voltage's transmission line system of the east zone of northeastern EGAT's system of electric generation authority of Thailand. The process of the program application can divided into 3 stages are:

Stage 1: Study the condition of 115 kV. High voltage's transmission line system of The east zone of northeastern EGAT's system are consist of 9 high Voltage substation by recording the true power and reactive power 24 hours a day in the period of 2 years. After that took the data to plot the graph and study the changes of the electric power in the different time and the different season.

The result of the study found that the suitable period that can take the true power and reactive power of every high voltage substation to represent the 3 sample periods are : Peak load period : 18.30-20.00 p.m. ,the day load period : 11.00-14.00 p.m. ,and the light load period : 04.00-07.00 a.m. The study from the changes of the graphs also found that the season did not take the impact to any changes of power system.

Stage 2: The application of Microsolf excels program could be divided into 3 parts are: the input of data of the program for calculation by studying the real data in the system . the input of the data of the program could be divided in to 2 types are. Automatic input and manual input. The second part of the program is calculation method by applying the solver function that

input. The second part of the program is calculation method by applying the solver function that is the special function in the Microsoft excels program. The Solver function is the optimization worked by changes the variable under the determined condition. The third part of the program is display that could be displayed the results of the calculation in 2 types are: the result of the system's summary and the result of the power flow list.

Stage 3: The Evaluation of the program by the comparison of the power loss before and after using the program under the differences of 4 conditions and compared to the standard program.

The result of the study found that in the same period the power loss by using the program is less than the power loss before using the program in any condition. The comparison of the power loss between the standard program and this program found that did not has any differences of the power loss. So the application of the Microsolf excels program can use effectively as good as the standard program.

Keywords : Power loss / 115 kV high voltage transmission line / EGAT / Excel / Solver