

CHAPTER 6



COMPOSITE LOAD MODEL

In this chapter, the concept of modelling composite load is proposed.

6.1 Model for composite load

As it would be impractical to represent separately individual loads at bulk supply point, a composite load which can group different loads together is necessary.

To develop a composite load model, it depend on studied load types and disturbances. If the studied case consists mainly of static loads and small disturbances, aggregate exponential model which presented in chapter 4 would be sufficient. When one or more induction motors form an important part of a local load such as industrial load where the dynamic performance is required in detail, induction motor model presented in chapter 5 should be used.

Industrial load can be comprised of a large group of induction motors and some static loads. It might be possible to represent the load by induction motor model together with exponential model as shown in Figure 6.1.

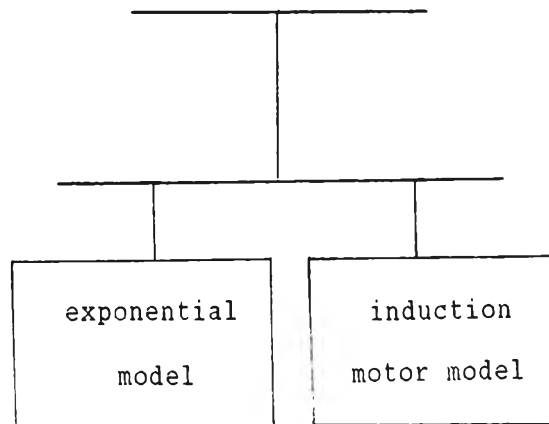


Figure 6.1 Composite load model

In this case exponential and induction motor model are considered separately and then combined together to represent composite load.

Active and reactive power of the load can be written as :

$$P_{total} = P_{ex} + P_{in}$$

$$Q_{total} = Q_{ex} + Q_{in}$$

where subscript 'ex' and 'in' due to exponential and induction motor model respectively.