



CHAPTER V

CONCLUSION

In this thesis, we select central receiver system because this system is easy to design and be suitable for Thailand geography. Furthermore, this system is easy to enlarge by to placing heliostats encircling the central receiver.

The solar flux density distributions produced on the image plane by single heliostat have been determined using the superposition technique. We calculate the flux density distribution on cylindrical surface by the summation of flux density distribution of each heliostat. The flux distribution of a single heliostat has the peak located at the central area of the distribution and falls to zero at the boundaries. As the mirror is moved further away from the receiver, the value of maximum flux density decreased compared with the flux density of mirror near the tower. This is because radius of solar disk increases with the tower-to-mirror distance. When the solar disk is larger than the principal image, the flux dimensionless is less than 1. The flat surface changes to a smooth curve.

The solar flux density distribution of all heliostat on image the plane are projected onto the cylindrical surface. There are two methods to calculate solar flux density distribution on the cylindrical surface, single aim-point strategy and multiple aiming strategies.

With a single aim-point strategy, the distributions spread over the cylindrical surface with maximum flux dimensionless less than the number of the heliostat rings. From several simulations, it can be concluded that the flux distribution be minimum in the direction of the sun.

It is necessary to resort to multiple aiming strategies by changing aim point from the center of cylinder to a surface ring of the cylinder. The solar flux density can be further increased up to 60 suns.

Although this thesis has emphasized a circular field configuration with the tower at the center, it can readily be adapted to the study of more complex geometrical configuration of the heliostat field. The analysis of square, elliptical, or other shaped fields, especially addition heliostat in the north field. For most time of the year, the sun rises in the south-east and sets in the south-west of Bangkok.