This paper designs an optimization model for Unit Commitment Problem (UCP) which is formulated as a Non Linear Programming Problem (NLPP) with respect to various constraints. The model can be solved by Lagrangian Decomposition (LD) problem and it is obtained by relaxing the constraints from NLPP using Lagrangian Relaxation Method. Generation scheduling is used to find the maximum demand utilized in the planning horizon by the minimum generation cost. It reveals the fact that Maximum profit can be achieved for power generating utility in order to supply the load in a reliable manner. Based on the numerical calculations and graphical representations, the optimum value is obtained by the proposed model for electrical power system cycles.

References

A Lagrangian Decomposition Model for Unit Commitment Problem


Index Terms

Computer Science

Applied Mathematics
Keywords
Unit Commitment  Generation Scheduling  Lagrangian Decomposition Model  Generation Cost