

**AN ANT COLONY SEARCH ALGORITHM (ACSA)
APPROACH FOR UNIT COMMITMENT PROBLEM**

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ABSTRACT

This thesis presents an Ant Colony Search Algorithm (ACSA) to solve unit commitment problem. The study involves the development of ACSA algorithm and engine to solve unit commitment issues. Problem formulation of the unit commitment takes into consideration the minimum up and down time constraints, start up cost and spinning reserve, which is defined as minimization of the total objective function while satisfying the associated constraints. Problem specific operators are proposed for the satisfaction of time dependent constraints. Problem formulation, representation and the simulation results for a three and four units generator-scheduling problem are presented.

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