

Security constrained unit commitment (SCUC)

The objective of the SCUC is to minimize the operation costs.

Due to the existence of transmission constraints it is very difficult to obtain feasible solutions to the SCUC problem. To obtain feasible solutions, [1] propose to adjust the generation levels with the commitment states obtained in the dual solution of the Lagrangian relaxation.

[1] Xiaohong Guan, Sangang Guo and Qiaozhu Zhai, "The conditions for obtaining feasible solutions to security-constrained unit commitment problems," in IEEE Transactions on Power Systems, vol. 20, no. 4, pp. 1746-1756, Nov. 2005.

[2] B. Hu and L. Wu, "Robust SCUC Considering Continuous/Discrete Uncertainties and Quick-Start Units: A Two-Stage Robust Optimization With Mixed-Integer Recourse," in IEEE Transactions on Power Systems, vol. 31, no. 2, pp. 1407-1419, March 2016.

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