

电力市场

## 市场环境下低电价可中断负荷的最优配置

罗运虎<sup>1</sup>, 邢丽冬<sup>1</sup>, 王 勤<sup>1</sup>, 刘海春<sup>1</sup>, 孙秀娟<sup>2</sup>, 王传江<sup>2</sup>, 吴 娜<sup>2</sup>

1. 南京航空航天大学 自动化学院, 江苏省 南京市 210016; 2. 山东科技大学 信息与电气工程学院, 山东省 青岛市 266510

收稿日期 2007-9-3 修回日期 网络版发布日期 2008-3-24 接受日期

摘要

为提高系统配置低电价可中断负荷(interruptible load with low price, ILL)的经济性, 针对ILL与高赔偿可中断负荷的经济互补特性, 运用协调优化理念, 从风险管理角度建立了市场环境下优化ILL配置的数学模型, 提出了基于代价对参数的灵敏度来指导优化方向的寻优算法, 并针对容量事故集对ILL的最优配置进行风险决策。仿真结果表明, ILL的配置过高或过低都不合适, 而应存在一个最优值。

关键词

[低电价可中断负荷; 备用配置; 协调优化; 风险管理; 电力市场](#)

分类号 [TM73; F123.9](#)

## Optimal Configuration of Interruptible Price with Low Price in Market Environment

LUO Yun-hu<sup>1</sup>, XING Li-dong<sup>1</sup>, WANG Qin<sup>1</sup>, LIU Hai-chun<sup>1</sup>, SUN Xiu-juan<sup>2</sup>, WANG Chuan-jiang<sup>2</sup>, WU Na<sup>2</sup>

1. College of Automation Engineering, Nanjing University of Aeronautics & Astronautics, Nanjing 210016, Jiangsu Province, China; 2. Institute of Information and Electrical Engineering, Shandong University of Science and Technology, Qingdao 266510, Shandong Province, China

Abstract

To improve the economy of configuring interruptible load with low price (ILL) in power system, according to the economic complement property between ILL and interruptible load with high compensation and using the idea of coordinative optimization, based on risk management a mathematical model of optimizing the configuration of ILL in market environment is built and an optimization algorithm based on the sensitivity of total compensation cost to parameters that guides the optimization direction is proposed; and the risk-decision for the optimal configuration of ILL aiming at all capacity faults is conducted. Simulation results show that either too high or too low configuration of ILL is unsuitable and an optimal configuration should exist.

Key words

[interruptible load with low price; reserve configuration; coordinative optimization; risk management; electricity market](#)

DOI:

通讯作者 罗运虎 [jn\\_lyh2006@126.com](mailto:jn_lyh2006@126.com); [yhluo@nuaa.edu.cn](mailto:yhluo@nuaa.edu.cn)

作者个人主页 罗运虎<sup>1</sup>;邢丽冬<sup>1</sup>;王 勤<sup>1</sup>;刘海春<sup>1</sup>;孙秀娟<sup>2</sup>;王传江<sup>2</sup>;吴 娜<sup>2</sup>

扩展功能
本文信息
▶ <a href="#">Supporting info</a>
▶ <a href="#">PDF (207KB)</a>
▶ <a href="#">[HTML全文](OKB)</a>
▶ <a href="#">参考文献[PDF]</a>
▶ <a href="#">参考文献</a>
服务与反馈
▶ <a href="#">把本文推荐给朋友</a>
▶ <a href="#">加入我的书架</a>
▶ <a href="#">加入引用管理器</a>
▶ <a href="#">复制索引</a>
▶ <a href="#">Email Alert</a>
▶ <a href="#">文章反馈</a>
▶ <a href="#">浏览反馈信息</a>
相关信息
▶ <a href="#">本刊中 包含 “</a>
<a href="#">低电价可中断负荷; 备用配置; 协调优化; 风险管理; 电力市场</a>
<a href="#">” 的相关文章</a>
▶ 本文作者相关文章
· <a href="#">罗运虎</a>
· <a href="#">邢丽冬</a>
· <a href="#">王 勤</a>
· <a href="#">刘海春</a>
· <a href="#">孙秀娟</a>
· <a href="#">王传江</a>
· <a href="#">吴 娜</a>