

SOUTHERN POWER SYSTEM TECHNOLOGY

ISSN 1674-0629 CODEN: NDJSAR

Vol. 5 No. 1 (Ser. 23) Published on Feb. 20, 2011

INTRODUCTION TO THE JOURNAL

Southern Power System Technology (bimonthly issue) is a science and technology journal, one of the few journals of this kind authorized in issue by the Chinese authority in recent years, and its first issue was on Oct. 20, 2007. The Journal focuses attention mainly on encouraging and promoting innovation, development and application of power technology as being considerably concerned for its theoretical advance and engineering achievement. The scope of the Journal covers power system analysis and control, power system dispatching technology, power system relaying, real time digital simulation, IT and intelligent apparatuses and instruments in power systems, power enterprise management, environment protection and energy saving. The Journal especially concerns the technology of bulk power transmission systems featured with multi-infeed HVDC lines and AC/DC-hybrid operation.

The Journal is registered at CSA (Technology) in USA, Ulrich's Periodicals Directory in USA, and Index Copernicus Journals Master List in Warsaw, Poland.

1st Editorial Committee of *Southern Power System Technology*

Honorary Chairman: ZHAO Jianguo

Director Member: QI Dacai

Vice Director Member: YU Jianguo, ZHAO Jie, WANG Jifeng, HOU Weidong

Member:

WANG Bing	LU Qiang (CAS ¹)	ZHU Yinghao (CAE ²)	LIU Yingshang	XU Chaoying
SUN Caixin (CAE)	LI Licheng (CAE)	LI Chengrong	LI Ruomei	LI Jibao
YANG Qixun (CAE)	WU Guoqing	YU Yixin (CAE)	SHEN Guorong (CAE)	ZHANG Yao
CHEN Chen	CHEN Yunpeng	GOU Ruifeng	LIN Huohua	SHANG Chun
ZHOU Xiaoxin (CAS)	PANG Zhun	ZHENG Jianchao (CAE)	ZHAO Jianning	RAO Hong
HONG Chao	XIA Qing	YAO Jian	XU Zheng	XU Daming
LIANG Xidong	HAN Yingduo (CAE)	CHENG Shijie (CAS)	XIE Guoen	PAN Fu
XUE Yusheng (CAE)	HUANGFU Xuezhen			

(1. CAS: Academician of Chinese Academy of Sciences; 2. CAE: Academician of Chinese Academy of Engineering)

Competent Authorities: China Southern Power Grid Co., Ltd.

Sponsor: China Southern Power Grid Technology Research Center

Editor and Publisher: the Editorial Dept. of *Southern Power System Technology*

Printing: Printing Branch Company, Guangdong China Sunshine Media Co., Ltd.

Domestic Subscription Code: 46-359

Abroad Post: China International Book Trading Corporation, Beijing (e-mail: BK6@mail.cibtc.com.cn)

Abroad Subscription Code: BM 439

Editor in Chief: RAO Hong

Associate Editor in Chief: CAI Zongyuan, ZHAO Rucheng (+8620)38120822

Editor Director: ZHANG Yala (+8620)38120842

Editor: HUANG Yu (+8620)38120823, LI Yanjing (+8620)38120841

Address: No. 6 Huasui Road, Zhujiang Xincheng, Guangzhou, 510623, P. R. China

E-mail: nfdwjs@csg.cn; Fax: (+8620)38120847

Website: www.nfdwjs.cn

中国科技核心期刊
中国电力报刊协会优秀期刊

《南方电网技术》 第一届编辑委员会

名誉主任 赵建国

主任委员 祁达才

副主任委员 余建国 赵杰
汪际峰 侯卫东

委员 (按姓氏笔画为序)

王兵	卢强	朱英浩
刘映尚	许超英	孙才新
李立涅	李成榕	李若梅
李继宝	杨奇逊	吴国青
余贻鑫	沈国荣	张尧
陈陈	陈允鹏	苟锐峰
林火华	尚春	周孝信
庞准	郑健超	赵建宁
饶宏	洪潮	夏清
晁剑	徐政	徐达明
梁曦东	韩英铎	程时杰
谢国恩	潘福	薛禹胜
皇甫学真		

目次

特约专稿

直流输电系统换相失败和功率恢复特性的工程实例仿真

分析.....洪潮(1)

智能电网标准化核心内容及其对EMS发展的影响

.....冯永青,李鹏,陈刚,梁寿愚,汪皓,周华锋(8)

智能电网

南方电网调度智能化关键技术研究

.....周华锋,李鹏,胡荣,梁寿愚(14)

广东电网新一代调度自动化技术支持系统总体方案研究

.....温柏坚,俞斌,白峪豪,马韬韬,郭创新(18)

调度集控自动化系统远动信息接入预处理软件设计

.....肖健,姚文莹,吴国沛,黄欣(22)

高压直流输电

真空有载分接开关在高压直流换流变压器中的运用

.....沈大中, Axel Kraemer, Dieter Dohnal(25)

高海拔特高压线路绝缘子的直流污闪特性

.....张福增,李锐海,王国利,张楚岩(29)

高压直流线路用长棒形瓷绝缘子的绝缘特性

.....赵宇明,郝艳捧,阳林,孙夏青,
卢文浩,罗兵,黎小林(33)

楚雄SVC控制保护系统功能和动态性能的RTDS试验

.....张建设,韩伟强,胡蓉(38)

高海拔±800 kV直流输电线路电磁环境测量

.....李敏,余占清,曾嵘,李锐海,
杨达维,刘磊,张华赢(42)

云广直流工程合闸角控制与断路器操作配合

.....杨涛,曹继丰(46)

±800 kV换流变压器型式试验中发现的若干问题分析

.....阳少军, 赵杰, 李文平 (49)

云广直流±800 kV交流滤波器的电阻过负荷保护

.....徐峰, 吕涛, 曹继丰 (53)

研究与分析**城市中压配电网典型接线模式的综合评估**

.....戴仲覆, 高强, 谢敏, 林声宏, 刘明波 (57)

面向馈线的中压配电网拓扑分析.....韩国政, 徐丙垠 (61)**基于层次分析法低压配电网改造方案迫切程度研究**.....曾丽, 荆朝霞, 赖水生,
邬志锋, 梁乐贤, 邱朝明 (65)**基于模糊TOPSIS和BP网络的电力变压器故障诊断方法**

.....兰华, 郑广瑞, 廖志民 (70)

基于波形不对称特征的变压器励磁涌流识别新方法

.....孙洋, 肖勇 (74)

玻璃纤维含量对复合绝缘子芯棒机械性能的影响

.....赵晓静, 赵宇明, 谢竹青, 罗兵, 郁杰 (78)

气体绝缘输电线路 (GIL) 的特点及其应用

.....尚涛, 李果 (81)

电力变压器局部放电检测方法探讨

.....梁钊, 杨晔闻, 叶彦杰 (85)

实践与经验**广东电网限制短路电流措施探讨.....蔡广林, 曹华珍 (90)****暂态行波在小电流接地故障选线中的应用.....戴宇 (95)****◇ 信息****广告目次..... (32)****征稿启事..... (99)**

美国《剑桥科学文摘 (工程技术)》(CSA) 来源期刊

美国《乌利希期刊指南》(UPD) 收录期刊

波兰《哥白尼索引》(IC) 收录期刊

中国科技论文统计源期刊

《中国学术期刊网络出版总库》全文收录期刊

《中文科技期刊数据库 (全文版)》收录期刊

《中国核心期刊 (遴选) 数据库》收录期刊

《Airiti Library》收录期刊

南方电网技术

(双月刊, 2007年10月创刊)

主管单位 中国南方电网有限责任公司

主办单位 南方电网技术研究中心

编辑出版发行 《南方电网技术》编辑部

主 编 饶 宏

副 主 编 蔡宗远 赵汝诚

编辑部主任 张亚拉

编 辑 黄 瑜 李艳菁

发行范围 国内外发行

印刷单位 广东九州阳光传媒股份有限公司
印务分公司

国内发行 广东省邮政局

国内邮发代号 46-359

国内定价 10.00元

国外发行 中国国际图书贸易总公司

国外邮发代号 BM 439

编辑部地址 广州市珠江新城华穗路6号

邮政编码 510623

电 话 (020) 38120823; 38120841
38120842; 38120822

传 真 (020) 38120847

电子邮箱 nfdwjs@csg.cn

nfdwjs@yeah.net

网 址 www.nfdwjs.cn

CONTENTS

• Featured Articles •

- Simulation Analysis on the Commutation Failure and Power Recovery Characteristic of an Actual DC Transmission System HONG Chao (1)
- The Core Content of Smart Grid Standardization and Its Impact on EMS Development FENG Yongqing, LI Peng, CHEN Gang, LIANG Shouyu, WANG Hao, ZHOU Huafeng (8)

• Smart Grid •

- Research on the Key Technologies of Intelligent Dispatching System for China Southern Power Grid ZHOU Huafeng, LI Peng, HU Rong, LIANG Shouyu (14)
- Research of the Overall Solution of Next Generation Dispatching Automation Support System for Guangdong Power Grid WEN Baijian, YU Bin, BAI Yuhao, MA Taotao, GUO Chuangxin (18)
- Design of the Telecontrol Data Pre-Processing Software for Integrated Dispatching and Central-Control Automation System XIAO Jian, YAO Wenying, WU Guopei, HUANG Xin (22)

• HVDC Transmission •

- Application of Vacuum On-Load Tap-Changers in HVDC Converter Transformers SHEN Dazhong, Axel Kraemer, Dieter Dohnal (25)
- The DC Pollution Flashover Characteristics of UHV Transmission Line Insulators at High Altitude ZHANG Fuzeng, LI Ruihai, WANG Guoli, ZHANG Chuyan (29)
- The Insulation Properties of Ceramic Long-Rod Insulator Used in HVDC Transmission Lines ZHAO Yuming, HAO Yanpeng, YANG Lin, SUN Xiaqing, LU Wenhao, LUO Bing, LI Xiaolin (33)
- RTDS Test on the SVC Functions and Dynamic Performance at Chuxiong Converter Station ZHANG Jianshe, HAN Weiqiang, HU Rong (38)
- Electromagnetic Environment Measurement of ± 800 kV DC Transmission Lines at High Altitude LI Min, YU Zhanqing, ZENG Rong, LI Ruihai, YANG Dawei, LIU Lei, ZHANG Huaying (42)
- Cooperation of PSD Control Device and Circuit Breaker Operation in Yunnan-Guangdong UHVDC Transmission Project YANG Tao, CAO Jifeng (46)
- Analysis on the Problems Occurred in the Type Test of ± 800 kV Converter Transformer YANG Shaojun, ZHAO Jie, LI Wenping (49)
- Overload Protection of ± 800 kV AC Filter Resistor in Yunnan - Guangdong DC Project XU Feng, LÜ Tao, CAO Jifeng (53)

• Study & Analysis •

- A Comprehensive Evaluation of Typical Connection Modes of Urban Medium-Voltage Distribution Networks DAI Zhongfu, GAO Qiang, XIE Min, LIN Shenghong, LIU Mingbo (57)
- Circuit Oriented Topology Analysis of Medium-Voltage Distribution Network HAN Guozheng, XU Bingyin (61)
- AHP-Based Study on the Urgency of Distribution Network's Reconstruction Programs ZENG Li, JING Zhaoxia, LAI Shuiheng, WU Zhifeng, LIANG Lexian, QIU Zhaoming (65)
- Fuzzy TOPSIS and BPANN Based Fault Diagnosis Method for Power Transformer LAN Hua, ZHENG Guangrui, LIAO Zhimin (70)
- A Novel Method to Identify Inrush Current Based on Asymmetric Characteristics of Waveform SUN Yang, XIAO Yong (74)
- The Effect of Fiber Content on Mechanical Performance of Composite Insulators FRP Rod ZHAO Xiaojing, ZHAO Yuming, XIE Zhuqing, LUO Bing, YU Jie (78)
- Discussion on the Characteristics of GIL and Its Application in Power Systems SHANG Tao, LI Guo (81)
- Discussion of PD Detecting Methods in Power Transformers LIANG Zhao, YANG Yewen, YE Yanjie (85)

• Practice & Experience •

- Study on the Short-Circuit Current Limiting Measures in Guangdong Power Grid CAI Guanglin, CAO Huazhen (90)
- Application of Transient Travelling Waves to the Selection of Small-Current-Grounding Fault Feeder DAI Yu (95)

◆ Information

- Advertisement List (32)
- Announcement (99)