

高电压技术

我国电网防污闪措施的回顾和总结

宿志一 李庆峰

中国电力科学研究院, 北京市 海淀区 100192

摘要: 阐述了我国电网的主要污闪事故以及大面积污闪的危害。总结了各个历史阶段我国在抗污闪方面的措施, 提出绝缘子防冰闪、大型套管的防雨闪和复合绝缘子防鸟啄等都是防污闪工作的主要内容, 最后指出, 应在“绝缘到位, 留有裕度”的基本原则下, 制定电网灾害事故等级划分标准、绘制相应的灾害等级分布图、提高事故多发地区的设防标准, 这对于防污闪工作具有重要意义。

关键词:

Historical Review and Summary on Measures Against Pollution Flashover Occurred in Power Grids in China

SU Zhiyi, LI Qingfeng

China Electric Power Research Institute, Haidian District, Beijing 100192, China

Abstract: The main pollution flashover faults occurred in power system in China and the harm of large-area pollution flashover are expounded. The measures against pollution flashover adopted by domestic power systems in different historical stages are summarized. It is pointed out that the measures against flashover, including anti-ice flashover of insulators, anti-wet flashover of large-sized bushings and anti-bird pecking of composite insulators, are important contents in this field. Finally, it is also pointed out that to draft the standard to graduate the class of power system accidents caused by natural disasters under the principle of “ensuring sufficient insulation level and reserving margin” and to draw corresponding distribution map of disaster class as well as to enhance the preventing level have great significance for the prevention of pollution flashover.

Keywords:

收稿日期 2009-11-03 修回日期 2010-07-09 网络版发布日期 2010-12-10

DOI:

基金项目:

通讯作者: 宿志一

作者简介:

作者Email:

参考文献:

- [1] Sun Zhaoying, Su Zhiying. Pollution flashover and selection of insulators used on transmission lines in China[C]//2001 World Insulator Congress and Exhibition. Shanghai, China: INMR Journal Press, 2001.
- [2] 宿志一, 赵辅, 李季. 1990年华北大面积污闪事故分析与对策[J]. 电网技术, 1991, 15(1): 1-6.
- [3] 刘兆林. 1996年末华东电网雾闪事故分析及对策[J]. 电网技术, 1997, 21(8): 63-66.
- [4] Liu Zhaolin. Analysis of fog flashover faults in East China power system at the end of 1996 and its countermeasures[J]. Power System Technology, 1997, 21(8): 63-66(in Chinese).
- [5] 牛方修, 张福贵, 刘文海. 安徽电网输电线路污闪断串事故浅析[J]. 中国电力, 1998, 31(1): 69-70.
- [6] Niu Fangxiu, Zhang Fugui, Liu Wenhai. Analysis of transmission line pollution flashover on Anhui power network [J]. Electric Power, 1998, 31(1): 69-70(in Chinese).
- [7] 崔江流, 宿志一, 车文俊, 等. 2001年初东北、华北和河南电网大面积污闪事故分析[J]. 电力设备, 2001, 2(4): 16-20.
- [8] Cui Jiangliu, Su Zhiyi, Che Wenjun, et al. Investigation analysis on large areas pollutant flashover faults in northeast, north China and Henan power networks in early 2001[J]. Electrical Equipment, 2001, 2(4): 16-20(in Chinese).
- [9] 张杰. 青海电网330kV花海一回输电线路污闪事故分析[J]. 青海电力, 1991(2): 1-8.
- [10] 王岷. 污染污闪及防污闪[J]. 四川水力发电, 1999, 17(2): 48-51.
- [11] 李有铨, 廖建平, 孙廷玺. 珠海地区输变电设备外绝缘防污闪的计算和分析[J]. 华北电力技术, 2003(7): 3-5.
- [12] Li Youcheng, Liao Jianping, Sun Tingxi. Calculation and analysis on preventing outdoor insulator from pollution flashover for power transmission & substation equipment of Zhuhai region[J]. North China Electric Power, 2003(7): 3-5(in

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(403KB)
- ▶ [HTML全文]
- ▶ 参考文献[PDF]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

本文作者相关文章

PubMed

Chinese). [9] 杨重石, 纪建民. 山西电网中部线路污闪事故分析及对策[J]. 高电压技术, 1996, 22(3): 76-77. Yang Chongshi, Ji Jianmin. The analysis and resolution of pollution flashover failure of transmission line in Shanxi power grid center[J]. High Voltage Engineering, 1996, 22(3): 76-77(in Chinese). [10] 洪金筑. 泉州电网连续污闪跳闸事故分析及防止措施[J]. 福建电力与电工, 1999, 19(2): 46. [11] 王国春, 陈原, 张开贤. 1999年3月京津唐电网部分线路闪络原因分析及反措[J]. 华北电力技术, 1999(8): 5-9. Wang Guochun, Chen Yuan, Zhang Kaixian. Analysis and solution on partial line flashovers of Beijing-Tianjin-Tangshan network in March of 1999[J]. North China Electric Power, 1999(8): 5-9(in Chinese). [12] 孔志南. 渭南电网污闪跳闸原因探析[J]. 西北电力技术, 2001(2): 41-43. [13] 刘琰, 王俊镨. 陕西电网“12?18”大面积污闪事故的分析及其防治对策[J]. 电网技术, 2002, 26(1): 82-85. Liu Yan, Wang Junkai. Analysis of large area pollution flashover occurred in Shaanxi power network on Dec. 18, 2000 and preventative measures for similar accident[J]. Power System Technology, 2002, 26(1): 82-85(in Chinese). [14] 樊灵孟, 刘平原, 郑晓光, 等. 广东电网污闪原因分析和防污对策[J]. 电瓷避雷器, 2006(2): 1-6. Fan Lingmeng, Liu Pingyuan, Zheng Xiaoguang, et al. The analysis and countermeasures against pollution flashover in Guangdong power grid[J]. Insulators and Surge Arresters, 2006(2): 1-6(in Chinese). [15] GB/T 16434—1996 高压架空线路和发电厂、变电所环境污区分级及外绝缘选择标准[S]. [16] 国家电网公司. 关于修订电力系统污区分布图的通知[R]. 北京: 国家电网公司, 1998. [17] 国家经济贸易委员会. 110~500?kV架空送电线路设计技术规程[R]. 北京: 国家经济贸易委员会, 1999. [18] 宿志一. 防止大面积污闪的根本出路是提高电网的基本外绝缘水平: 对我国电网大面积污闪事故的反思[J]. 中国电力, 2003, 36(12): 57-61. Su Zhiyi. To intensify basic external insulation level of power system- fundamental way for prevention of large: scale pollution flashover [J]. Electric Power, 2003, 36(12): 57-61(in Chinese). [19] Q/GDW 152—2006 电力系统污区分级与外绝缘选择标准[S]. [20] IEC 60815-1: 2002 污秽条件下高压绝缘子的选择和尺寸确定 第1部分: 定义、信息和一般原则[S]. [21] DL/T 810—2002 500?kV直流棒形悬式复合绝缘子技术条件[S]. [22] 刘泽洪. 复合绝缘子使用现状及其在特高压输电线路中的应用前景[J]. 电网技术, 2006, 30(12): 1-7. Liu Zehong. Present situation and prospects of applying composite insulators to UHV transmission lines in China[J]. Power System Technology, 2006, 30(12): 1-7(in Chinese). [23] 李庆锋, 范峥, 吴穹, 等. 全国输电线路覆冰情况调研及事故分析[J]. 电网技术, 2008, 32(9): 33-36. Li Qingfeng, Fan Zheng, Wu Qiong, et al. Investigation of ice-covered transmission lines and analysis on transmission line failures caused by ice-coating in China[J]. Power System Technology, 2008, 32(9): 33-36(in Chinese). [24] 宿志一. 超高压变电设备污秽外绝缘设计的重点[J]. 中国电力. 2001, 34(1): 51-54. Su Zhiyi. To prevent the big bushing flashover the focal point of external Insulation design of the UHV transformation equipment [J]. Electric Power, 2001, 34(1): 51-54(in Chinese). [25] 梁旭明, 蒲春雨, 寻凯, 等. 500?kV线路复合绝缘子鸟啄情况调查及原因分析[J]. 电网技术, 2005, 29(22): 19-23. Liang Xuming, Pu Chunyu, Xun Kai, et al. Investigation on bird damage to composite insulators of 500?kV transmission lines[J]. Power System Technology, 2005, 29(22): 19-23(in Chinese).

本刊中的类似文章