



光纤电流差动保护在应对冰灾期间

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摘要: OPGW/ADSS光缆是一种电力网专用的通信媒体。由于充分利用线路走廊, 具有施工方便、投资节省的优点, OPGW/ADSS技术被国内外大多数电力通信网所采用, 成为最为主流、成熟的电力通信光缆, 但在遭受冰灾时, 会因为光纤通道中断而对电网的安全稳定运行造成影响, 如南方电网在2008年冰灾期间的情形。介绍利用公用通信网增强电力通信抗灾能力的实例, 并针对公用通信网是自愈环, 电流差动保护不再适用的特点, 提出了在光纤电流差动保护中增加光纤距离保护逻辑, 应急期间仅使用纵联保护的技术方案。

关键词: 光纤; 电流差动保护; 公用通信网; 纵联保护; 中国南方电网

Enhancement of Optical Fibre Line Differential Protection When Using Public Communication Network Channels During Anti-icing

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Abstract: The OPGW/ADSS optical line is a special communication media for electric power grid. Due to its advantage of construction facility, low investment and no need at all for addition transmission line corridor, OPGW/ADSS technology is the mainstream and mature solution for electric communication networks worldwide. But as an ice storm disaster befalls, optical fibre lines could be broken, resulting in serious impact on the grid operation as what happened in the icing case of China Southern Power Grid (CSG) in Jan. 2008. This paper illustrates how to use public communication networks to enhance the capability of OPGW/ADSS for anti-icing in the icing case of CSG, 2008, and presents a solution of enhancing optical fibre line differential protection to overcome the difficulty of employing the public communication network as it is self-recovery and not suitable to OPGW/ADSS channels, i.e. to add longitude impedance protection principle in optical fibre line differential protection equipments, and to exclusively use this protection in emergency cases.

Key words: optical fibre; line differential protection; public communication; longitude protection; CSG

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