

## 电力系统

### 补偿约束下动态电压恢复器不对称电压暂降补偿方法

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#### 摘要:

针对补偿电压注入约束下的不对称电压暂降补偿, 提出一种新的动态电压恢复器(DVR)补偿策略。首先以A相为参考相, 以各相电压端点为圆心作补偿极限圆, 通过旋转B、C相极限圆得到有效补偿域, 然后根据有效补偿域与参考电压圆的交角来确定完全补偿弧; 最后沿此弧旋转负荷电压, 在弧内求取最小能量注入解。该方法简单直观, 适用于补偿三相负荷完全对称时由各种故障类型引起的电压暂降。由于此方法无需先抵偿负序和零序分量, 通过在有效补偿域内对源电压进行直接计算, 最大故障范围内实现负荷电压的对称补偿, 且求解过程无循环搜索, 响应速度快, 满足实际工程应用的需求。

#### 关键词:

### A Method to Compensate Asymmetrical Voltage Sag of Dynamic Voltage Restorer Under Constraint of Compensation Voltage Injection

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#### Abstract:

A new strategy of unbalance fault voltage compensation for dynamic voltage restorer (DVR) under the equipment's restriction of compensation voltage is proposed. First draw compensation limit circles of each phase voltage, then rotate phase B and C to gain a mutual area with phase A witch we called effective compensation area. And we get the ideal compensation arc though compute the angle between the intersection points of the effective compensation area and the reference voltage. Then, rotate load voltage along the arc to get the minimum energy injection voltage of DVR for each phase. This method is simple and clear that able to compensate all kinds of sags. It maximizes the compensation bound of DVR for it needn't eliminate zero and negative sequence voltage first. The computation speed is also fast because the whole process does not conclude repetitive search.

#### Keywords:

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