

**S3-2**

## **Active Defense Substation Domain Strategy Control System to Against Blackout**

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### **Abstract**

In the previous blackout, overload components out of operation often led to the expansion of the accident. Through the further analysis of such problems, one active defense substation domain strategy control system to prevent the N-1 contingencies to N-2 contingencies caused blackout was proposed. Based on the real time analysis the states of substation's running elements and backup elements, the active defense control strategy was created by learn from the principles and action messages of backup switching equipment, protection and automatic stability control devices. In order to keep the overall system stability, the active defense control strategy was completed by actively put in the backup element or quit part of the overload elements, to make the system into a new equilibrium state. One contact substation was used to be the example to illustrate this strategy, which key technologies were analyzed to deduce the final control strategy programs. Contrasting these control strategies by PSCAD/EMTDC simulation software, the results presented that this strategy could change the "Close to collapse" zone into the stability states, and not only ensures fast response and high reliability, but also the building program simple and practical.