
Seismic-resistant Off-grid Solar Containerized Substation for Dodoma Power Grid Distribution Station

Can a multi-level seismic retrofit a substation?

According to the equipment repair efficiency, post-earthquake iterative analysis was carried out and the authors obtained the recovery function of the substation which successfully quantified the seismic resilience level of the substation. This paper presents an analysis method suitable for multi-level seismic retrofitting of substations.

How to comprehensively describe the seismic resilience of substations?

How to comprehensively describe the seismic resilience of substations is the focus of current research. Bruneau et al. proposed the concept of measuring seismic resilience by area. The integral of the loss of system function and the repair time is used to measure the seismic resilience level of the substation.

What is the difference between a power grid and a substation?

Both power grids and substations are network systems for electricity transmission. However, most research on the power grid system focuses on the cascading effect of functional failure and the components vulnerability, while substations focus on the reliability and functional connectivity of the whole system during disasters.

How can seismic retrofitting improve a substation system's resilience?

To improve the substation system's level of seismic resilience, seismic retrofitting analysis was carried out. If existing conditions made a 20% number of equipment being optimized in the substation, seismic retrofitting strategies at the equipment level (EL) and the unit level (UL) were adopted, respectively.

The seismic resilience of substations significantly influences the secure and stable operation of the power system. For example, the Sichuan electrical power grid was severely ...

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To quantify the seismic retrofitting efficiency of equipment, a set of seismic analytical methods for retrofitting was developed using a typical 220 kV substation. Seismic ...

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