Suriname Thermal Power Storage Frequency Regulation Project

Overview

Can flexible load and energy storage be used to regulate frequency?

The method of using flexible load on the load side and energy storage on the power side to regulate frequency is proposed. The depth limit of energy storage action is proposed, which clarifies the dead zone and the maximum output limit.

How does frequency regulation affect energy storage?

When the energy storage system must be charged under the condition of frequency regulation, the charge power absorbed by the energy storage system steadily decreases when the SOC is at a high boundary value, and it eventually cannot absorb the charge power when the SOC hits the critical value.

What is the integrated regulation strategy for energy storage systems?

the integrated regulation strategy proposed in this paper determines the switching time and operating depth of the energy storage system and the flexible load, and makes rational and effective use of the frequency modulation resources to regulate, giving full play to their respective advantages.

How do energy storage systems participate in AGC frequency modulation?

When the energy storage system participates in AGC frequency modulation, it needs a certain response time to follow the charging and discharging process of the command signal. To simplify the description, the first-order inertial link can be used to simplify the process, and the equivalent model is shown in Fig. 3.

What is the frequency modulation control strategy of fire-storage AGC?

In this paper, the frequency modulation control strategy of fire-storage AGC considering flexible load characteristics is studied. The operating states of the

system are divided by the frequency deviation partition, and different adjusting methods and means are adopted to maintain the stability of the system under different operating states.

What is the transfer function of thermal power unit Governor?

The transfer function of thermal power unit governor is: (1) $G_{gov}s = \frac{1}{1 + sT_g}$ where: T_g is the speed governor time constant of thermal power unit.

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