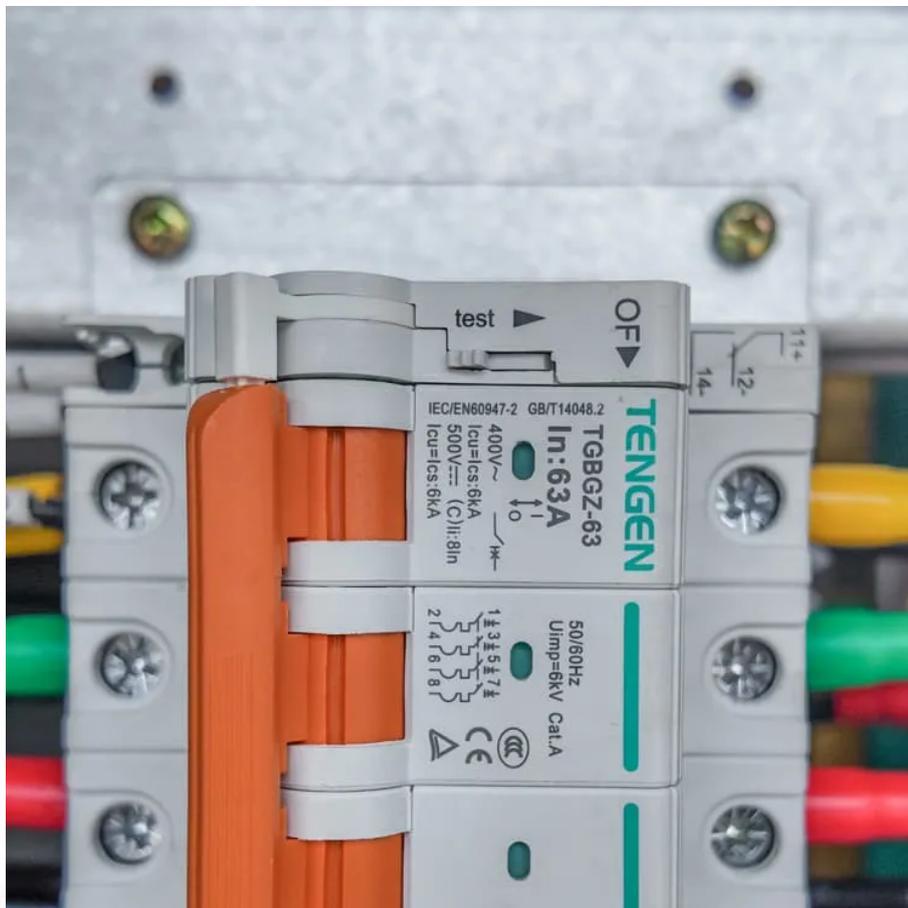


Diversion tunnel for solar power station generator set





Overview

Do pumped storage power stations have a diversion tunnel?

However, their high cost limits large-scale deployment. To balance flexibility and cost, pumped storage power stations (PSPSs) can adopt a hybrid configuration where VSUs and FSUs share a diversion tunnel. However, this configuration may induce unfavorable hydraulic interference between units, posing transient safety risks.

What strata are exposed along the hydropower station diversion tunnel?

The strata exposed along the Hydropower Station diversion tunnel mainly consist of the weakly weathered upper zone of the Zhukazu Formation (T2z) without unloading, the weakly weathered lower zone and the micro-fresh dacite rock mass, with local lamprophyre dykes.

How big is a diversion tunnel?

The range of the computational model is 165 m × 167 m, and the excavation contour size of the diversion tunnel is 15.00 m × 17.30 m. Based on the fundamental concept of elastoplastic mechanics, the model range is much larger than five times the excavated tunnel diameter; thus, the influence of boundary effects can be neglected.

Do hybrid pumped storage systems share a diversion tunnel?

Therefore, in-depth investigations of the load rejection transition process in FSUs and VSUs that share a diversion tunnel are necessary. Such studies are crucial for advancing the understanding of the dynamic behavior of hybrid pumped storage systems and for improving their operational safety and stability.



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