

## **Development of New Protective Relay for Long Feeding Circuit**

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All Shinkansen power feeding systems are provided with protective relays which immediately detect the faults in power feeding circuits. The protective relay is built by considering power feeding distance as 30 km or less. However, in case of the Shinkansen lines built from now on, the power feeding distance may occasionally become longer than 30 km, because the substation or sectioning post may be constructed in mountainous district. In that case, the current protective relay may be unable to be used. Therefore, the authors have developed a new protective relay based on a principle different from the past. The developed protective relay can be adjusted to feeding distance of more than 30 km. This paper describes the principle and verification test results concerning the newly developed protective device.