

The Application of the Y-branch joints in TEPCO

Kensuke WATANABE, Yasuhiko AIHARA, Shinichi TSUCHIYA

1 - Tokyo Electric Company, Chiyoda-ku, Tokio, Japan
watanabe.kensuke@tepcoco.jp, aihara.yasuhiko@tepcoco.jp,
tsuchiya.shinichi@tepcoco.jp

1. Background

When the cable circuit installs, the cable terminations are installed on both ends of the circuit in general. Tokyo Electric Power Company (TEPCO) installed the Y-branch joint (hereafter called by YBJ) when the new cable circuit installs near the existing cable circuit. TEPCO has the YBJ for the rated voltage up to and including 275kV. By using the YBJ, we can install the new cable circuit to connect the existing cable circuit without a cable termination and some of the cable laying. We have approximately 4,400 pieces of the YBJ at the time of March 2010.

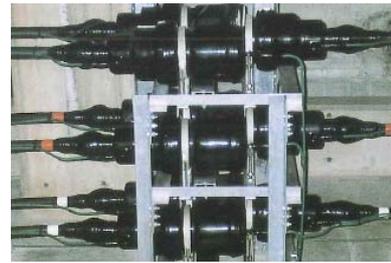


Fig.1 a 66 kV Y-branch joint

Fig.1 shows a picture of a 66kV YBJ. Fig.2 shows schematic illustration of advantage the YBJ.

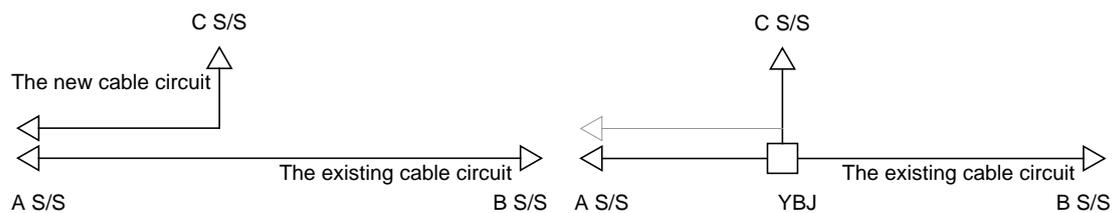


Fig.2 Schematic illustration of advantage the YBJ.

2. Advantages and Drawbacks of the YBJ

1. Advantages

We can use the space pragmatically and save the accessories.

- Saving the accommodation space for power cable systems; Tunnel, Ducts, etc.
- Saving the accessories for power cable systems; circuit breakers, termination, termination pedestals, etc.
- Depending on the cable locations, we can save the total amount of the installation.

2. Drawbacks

- Difficulties of the disconnection from the circuit.
- One cable failure has adverse effect on the power cable system resulting from the disconnection-difficulty.

3. Application in TEPCO

- We use the 66kV compact type YBJ used in the narrow space, and the 275kV YBJ which connects XLPE cables and self-contained oil filled cables.
- 66kV and 154kV YBJ circuits have fault section locating system, and 275kV YBJ circuits have fault point locating system.