Development of the super-capacity insulated wire cable for distribution line.

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As development of industrial society continues to increase, the metropolis becomes to need more electric power. To meet recent increasing demands for electric power in metropolis, we should expand a distribution line.

But it can be expensive to charge the cost of expansion work. It also doesn't make a good appearance when the distribution cable is installed in the metropolis. Therefore, we are considering solving this problem in two aspects as below.

A First thing is to enlarge “size of conductor” or reduce loss of “ac resistance” for conductor as using enamel coating. However, it causes to gain the weight and complex process of production for cable. So, it does not seem to be efficient because the cost of making cable is increased and it could lead to other problem for the cable.

Another thing is to raise the operating temperature of cable due to using the thermal-resistant compound. If electric current is passed through the electric power cable, it is created heat by resistance. Temperature of cable steadily rises as increasing load current.

XLPE has been widely used to insulate the CV cable because its high thermal stability might be originated from cross-linking structure. However, it has restriction on the operating temperature up to 90℃. The insulation has properties that rapidly fall if it is continuing above 110℃ for a long time, Therefore, it can transmit more current if thermo-stability of insulation is elevated in the cable of the same structure.

In this paper, we deal with developing insulated outdoor cable that can increase in normal operating condition of distribution cable from 90℃ to above 120℃ and producing, verifying for high-capacity cable

Development of insulation increased in normal operating temperature through special cross-linker is added special PE.

It is weighed new XLPE cable against existing XLPE cable and compared with same structure.

In addition , we verified aging property throughout long-term experimental test.