1. Cable Transition Compounds

There are three different types of cable transition compounds. In Hornbæk, the transition compound forms part of a 150/60 kV substation. The transition compounds in Tebbestrup, Katbjerg, Skudshale and Gistrup are identical, while the compound in Bramslev is somewhat different to the others.

All the compounds have room for two 400 kV circuits or one 400 kV circuit and one 150 kV circuit.

Map showing the location of the compounds

Each of the transition compounds covers a fenced-in area of approx 4,000 square metres. Dead-end towers at the transition compound are relatively high. This means that work can be performed on one circuit if it is disconnected from the busbar, while the other cable remains in operation.

Drawing showing compound design. Figure 57

A precondition for the permit being granted to build the 400 kV connection from Aarhus to Aalborg was that the Bramslev-Haverslev section was established on a new type of tower. A type which was designed and produced on the basis of an open project competition.
Three variations were designed: suspension tower, running angle tower and angle tower. A total of 87 new design towers were erected.

The cable transition compound Bramslev is part of this specially designed system. The design of this compound is therefore quite different from that of the other transition compounds. The heavy portals suggest that the line switches from being an overhead line to an underground cable – or vice-versa. The compound is shaped like an oval Viking stronghold. The high-voltage apparatus and terminations are hidden by the banks around the plant.

Cable transition compound Bramslev. Figure 33

In the cable transition compounds it has been decided to have an earthing switch and a set of surge arresters. The earthing switches are placed in the cable transition compounds in order for the cables to be safely discharged before any work has to be carried out on the system. Similarly, the earthing switch provides a secure temporary earth during work on the cable systems.

Cross-sectional drawing of compound Bramslev, figure 34, or compound Katbjerg, figure 35

The compound building consists of a prefabricated container. The container holds a UPS plant, control system for the earthing switch as well as communication links to the control room. Furthermore, equipment for distributed temperature monitoring of the cables can be located here.