



Nomex

Only by DuPont

Innovative Mobile Transformers Allow Operational Flexibility



Hybrid Insulation System Using NOMEX® Brand Paper Maximizes Capacity per Unit Weight

- Peak loading
- Emergency power
- Maintenance backup
- Reduced substation investment
- Temporary substation
- Greater system coverage

NEW TRANSFORMERS ON A R

**NOMEX® BRAND
INSULATION IS THE KEY
TO BOOSTING THERMAL
CAPACITY WHILE KEEPING
WEIGHT DOWN IN
HYUNDAI'S NEW MOBILE
TRANSFORMERS**

Two months out of the year, demand for electrical power surges in South Korea as air conditioners are switched on in July and August. But in some parts of the country local substations don't have sufficient transformer capacity to handle the additional load. To avoid outages, local utilities rely on mobile transformers that can be moved where they are needed to provide supplemental backup during summer peak periods — as well as during natural disasters and other emergencies.

Until recently, the largest available mobile transformer was the 23MVA (megavolt ampere) class. But in the early 1990s, Hyundai Heavy Industry, the major manufacturer of electrical generating equipment in South Korea, set out to design a mobile transformer for customers already using Hyundai stationary transformers. Hyundai's goal was to develop a 40MVA power capacity liquid-filled mobile transformer within highway load limits.

The challenge that the Hyundai project team faced in

designing such a unit was how to get the maximum power out of the smallest, lightest-weight package. Forty tons is the legal limit for over-the-road equipment in South Korea. Additionally, good structural design is essential if the transformer is to be durable and resistant to internal vibration caused by repeated bumps and jars on the highway. Compared to the 23MVA units, getting 40MVA in a similarly sized package would require the equivalent of a 40 percent weight reduction.

The way Hyundai proposed to build a smaller and lighter mobile transformer was by making the space between conductors very small. This design feature had the effect of increasing the temperature, so special insulating and

