



AMEC SPIE Hoogspanningslijnen BV (the Netherlands) supplied backup pylons to Electricity Vietnam, and provided training to more than a hundred employees of companies operating in the energy sector.

Vietnam

Working towards an uninterrupted power supply system

Working in partnership with KEMA, AMEC SPIE Hoogspanningslijnen BV supplies backup high-voltage pylons all around the world. The subsidiary has supplied Electricity Vietnam with an Emergency Restoration System (ERS) or backup line that can be used in the event of a disaster, or to temporarily divert a power line during essential work. By temporarily rerouting one or more circuits via a number of backup pylons, the system ensures that power supplies are not interrupted. AMEC SPIE Hoogspanningslijnen was contracted to handle the logistics for the project. Four complete sets of pylons were delivered to Electricity Vietnam, each consisting of ten 'single-pole' pylons designed to carry voltages of up to 245 kV. These pylons

can also be converted into three 'twin-column H-frame' pylons capable of handling up to 525 kV. Each set of pylons was accompanied by lifting apparatus, all the necessary tools and a user licence for the KELSOP software application, which was developed to facilitate route planning in situations entailing line diversions. This project, worth €2.2 million, includes a significant amount of equipment: 60 pylons, comprising 640 standard sections and 240 small sections, 6 lifting towers, 934 insulators, 470 stay wires, 30,000 fasteners, etc. This equipment was pre-assembled and packed into 38 containers in six weeks by a team averaging six members. A logistics centre had been set up specifically for this project.

Installing 'single-pole' and 'H-frame' pylons

A vertical lifting system was designed to allow the pylons to be installed quickly. Each pylon segment is added to the base of the assembled segment immediately above it; the assembly can then be raised by the height of one segment. This system offers many benefits, including allowing almost all the work to be carried out at ground level, keeping the work site very small, and making it possible to assemble pylons on sloping terrain. The tools supplied with the system also allow all the equipment to be assembled manually. In order to attach the stay wires, the installers used hydraulic machinery to drive anchors into the ground. Once inserted, the tensile strength of these anchors was tested. In certain specific cases, ballast such as concrete blocks can be used for the anchors.

In addition to supplying the equipment, the project involved organising training courses. A group of 22 Vietnamese workers followed a preliminary course in the Netherlands in June 2003. After that, in September, instruction courses on installing pylons and using the software were organised for all the Vietnamese power distribution companies. To this end, Messrs. Janssens, Van der Pligt and Stegeman of AMEC SPIE Hoogspanningslijnen and Mr. Lommers of KEMA TDC spent a week in Hanoi, followed by a week in Ho Chi Minh City. Together, the four of them trained around 110 employees of companies operating in the energy sector. Organising these practical training sessions (which were presented in English, with interpreters translating into the local language) was an unforgettable experience. There were some moments of total confusion, but by the end of the week-long course, everyone was completely satisfied with the outcome. AMEC SPIE Hoogspanningslijnen has every right to be proud of the rather special success of this project, which, through a 'knock-on' effect has significantly boosted the company's turnover. Working with people from another continent, with a different culture and lifestyle was a unique and instructive experience. With the Emergency Restoration System, Vietnam has taken a great step forward toward a more dependable electricity distribution system, which will surely have a beneficial impact on the country's economic reconstruction.



Training Vietnamese workers

In the first training course of its kind in the Netherlands, instructors gave 22 trainees detailed demonstrations of the system, described its basic concept and history, and explained how the pylons are used. Special emphasis was placed on the use of backup pylons in the context of maintenance and emergency plans (see photo above). Below: The group trained in Hanoi with the four Dutch instructors.

