



*J.C. van Staveren, 1955*

## J.C. van Staveren and the history of KEMA

The history of KEMA in the Netherlands reflects the history of electricity. The career of KEMA's first director, Professor J.C. van Staveren, reflects both.

### **'A profession with not much perspective'**

Jacob Cornelis van Staveren was born in 1889 in Amsterdam. After Polytechnic, he studied electrical engineering at Delft University of Technology. His early years coincide with the development of practical applications for electricity such as the carbon arc lamp for street lighting, the electrical motor and the light bulb. Apparently, people thought at the time that its potential had already been reached. In an interview in 1977 Van Staveren recalls: "When I graduated from Delft in 1913, we had the feeling we'd chosen a profession which didn't really have a future."

Nothing could be further from the truth. After the First World War electricity supply really takes off. Typical for the Netherlands is the involvement of the government from the start. The first electricity companies are private enterprises, but as early as 1895, Rotterdam is the first municipality to take charge of its electricity supply. Around 1910, almost all of the larger municipalities have their own electricity company,

gradually provincial electricity companies are established, and central government has a supervisory role.

### **A matter of public interest**

Clearly electricity is seen as a utility, something of national importance. Cooperation between all of the municipal companies is therefore vital. For this purpose the Association of Directors of Electricity Companies (in Dutch abbreviated as VDEN) is established in 1913. The VDEN holds discussions, advises, and – if necessary – takes action in order to support the common interests of the municipal electricity companies in the Netherlands.

One of the first tasks of the VDEN is research into the centralization of production: a limited number of companies, linked through a high-voltage overhead grid. The ultimate goal is an interconnected grid, through which the electrical capacity of the power stations can be better shared and used. To achieve this, the Commission of High-voltage power lines was estab-

lished in 1918, later becoming the Central Office of the VDEN. At the helm of both stood the young engineer Van Staveren. From that moment on, the creation of an interconnection grid became a constant in his career.

Another effect of the central role of government in the electricity supply is the focus on safety. Safety guidelines were drawn up at an early stage. There was also a need for unambiguous, independent auditing of installations and materials. For a time this was the task of the Central Office, but in 1927 the VDEN decides to set up a dedicated institute: KEMA, the N.V. tot Keuring van Electrotechnische Materialen (in English: Company for the Testing of Electrotechnical Materials). And Van Staveren is appointed director of KEMA.

### Own premises

The young KEMA is located in the former Hotel Bellevue in Arnhem: an attractive building, but hardly ideal for establishing labs and anyway very soon too small. From 1931 the 'Den Brink' estate near Arnhem was purchased bit by bit. This estate is still at the heart of today's Business Park Arnhem.

The extra space was also needed to build a Short-circuit Lab, with the extremely high capacity – for those days – of 500 MVA. An accident in Amsterdam, in which a large, oil-insulated circuit breaker explodes, demonstrates the urgency of building testing stations with very high capacity. The Short-circuit Lab

and later extensions will make KEMA world famous. Soon other buildings appear on the site, including a warehouse, office, workshop and high-voltage lab. Van Staveren is said to be the driving force behind the building plans. He takes pains to ensure that the buildings fit well into the beautiful surroundings and makes sure that the trees remain part of the landscape.

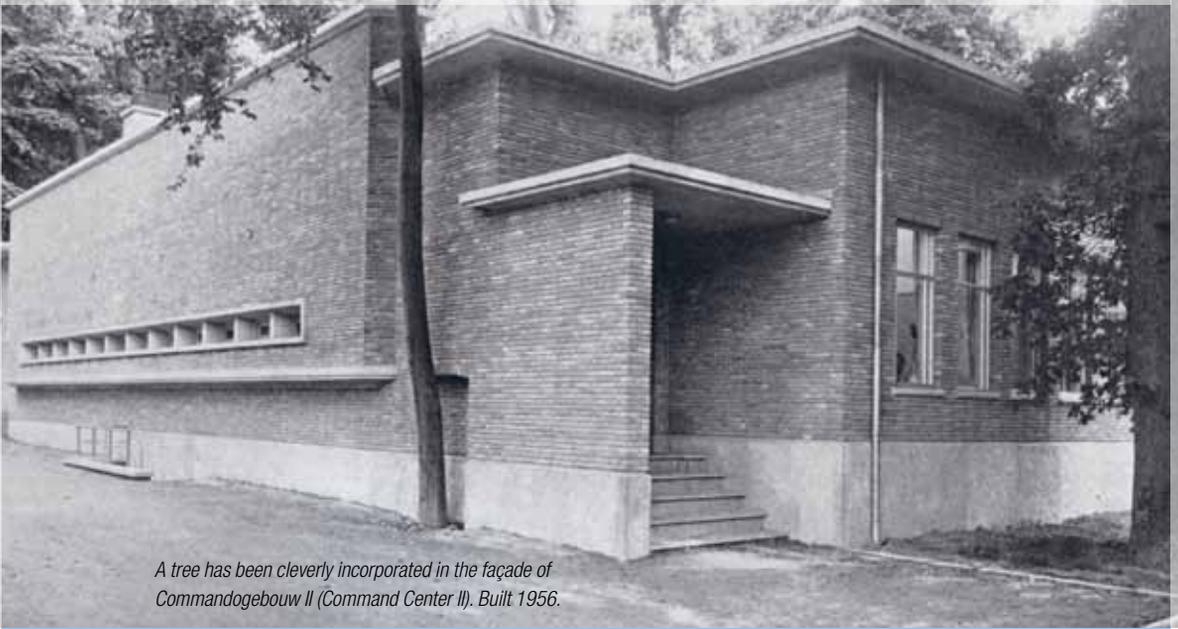
### Networker before his time

Van Staveren must have been a charismatic man. When he leaves KEMA in 1964 (at the age of 75!) many of the speakers refer to his great oratory skills. One of his successors, J.H. Bakker, talks about it in an interview in 1997: "He had the ability to tell stories until you were completely convinced of his point of view. He had amazing presence." This power of conviction and the ability to clearly explain complex issues come in very useful with the development of KEMA, which depended on good contacts and cooperation with everyone in the electricity sector.

Van Staveren – as a real entrepreneur – focused on new development and opportunities for innovation. There are plenty of these in the first half of the twentieth century. Whereas KEMA started with examining and testing electrotechnical materials in for example power stations, transformer houses and networks, soon testing and examining domestic equipment and installations became increasingly important. After 1920 novelty items such as the vacuum cleaner and the

*View of the Short-circuit Lab complex, late 1930s.*





*A tree has been cleverly incorporated in the façade of Commandgebouw II (Command Center II). Built 1956.*

electric iron appear on the market. And electricity is increasingly used for electrical drive applications, such as electric trams and pumping water from the polders to keep them dry – something of vital importance for the Netherlands. Gradually KEMA starts working for other clients in the electricity sector, such as the Ministry of Defense and foreign companies and organizations.

### **The postwar years: a new start**

The Second World War was as tough a time for KEMA as it was for the rest of the Netherlands... At the end of this period, Van Staveren and co-director Prof. De Zoeten make plans for strengthening cooperation between the electricity companies. This cooperation will finally lead to the creation of a National Grid. Back in the office after the war, both men are energetically engaged in rebuilding the organization and, after a few years, KEMA is once again fully operational.

The postwar years see a number of important developments, such as the construction of a grid that links the Dutch provinces and neighboring countries. Nuclear energy also shows promise. From 1958 KEMA carries out a number of tests in this area in a specially equipped nuclear reactor lab. To strengthen fundamental research within KEMA, a research fund is established and there's a steady increase in the number of buildings.

Van Staveren is closely involved in all of these renovations and in addition sits on the boards of numerous related organizations and companies. In 1930 he is appointed Affiliate Professor of Electrical Engineering and Technical Physics at Utrecht University.

In 1964 he leaves KEMA. At a farewell ceremony, many praise his ability to forge connections between people and organizations – one of his greatest achievements. Mr. Jansen, speaking on behalf of the personnel, refers to the saying which the departing director was fond of quoting: 'With your hat in your hand, you're welcome throughout the land'. According to him this illustrates the KEMA approach: "Our mentality is ... in many ways different from that of large companies. I think we're more modest and we don't put on airs. That's why there's such a strong esprit de corps here."

In 1979 J.C. Van Staveren dies, aged 89. ●