

Biography - Dr. Leonhard Martin Wedepohl

He was born in Pretoria in January, 1933. He matriculated from Grey College, Bloemfontein in 1949 when he was awarded the Dux medal as the top graduate of the year as well as the Science, Mathematics and SA history prizes.. He was awarded the degree Bsc.(Eng)(Rand) cum laude by the university of the Witwatersrand in December 1953, and in 1957 he was awarded the degree PhD. by the Victoria University of Manchester.

From February 1954 to September 1954 he worked as a graduate apprentice at the British General Electric Company in Birmingham. He then joined A. Reyrolle and Company in Hebburn County Durham in England as a research engineer where he pioneered the development of transistor distance relays, at that time using germanium transistors because silicon was not yet available. He was awarded the PhD. Degree for this work.

In 1957 he joined the staff of Eskom as telecommunications planning engineer and was seconded to the British General Electric Company's telecommunications division in Coventry, the Central Electricity Generating Board in London and the Brown Boveri Company in Switzerland. He took up his position at Eskom Head Office in Johannesburg in 1959. During his time at Eskom he was responsible for several major power line carrier telecontrol systems in the Eastern Transvaal, Transvaal, Orange Free State and the Cape Province, including the wave-changeover scheme on the newly completed Cape Town - Beaufort West rail electrification system. He also conducted field trials on the Reyrolle transistor distance relay prototype, which was the first in the world. It was installed on a 22 kV feeder at Bronkhorstspuit. This location was chosen because of its proximity to Johannesburg and because of very high lightning incidence. This was to ensure that the fragile semi-conductors had been adequately designed to cope with high surge voltage levels.

During this period he also measured a phenomenon on the Grootkop Kimberley line's power line carrier system, which later became known as modal cancellation. This chance experience was to have a major effect on his research activities in the years to come.

After a short period as branch manager in Pretoria with the Swedish L. M. Ericsson Company in 1961, he returned to Reyrolle in England in 1962. Following the success of the tests of the transistor distance relay at Bronkhorstspuit between 1959 and 1962 the company decided to embark on a major venture to replace electro-mechanical relays with those using silicon transistor technology. In his capacity as head of relay research and development he saw into production distance relay systems, phase comparison power line carrier relay systems as well as a range of special transistor relays. The distance protection system developed is still in production by the company. During this period he also developed the theory of multi-conductor wave equation and wrote a computer program, initially with the object of explaining modal cancellation which had been measured on the Grootkop - Kimberley line.

The work in wave propagation showed such promise that he took up a position as a lecturer in the electrical engineering department at UMIST in Manchester in 1964. There he was successively appointed senior lecturer in 1966, professor of power systems engineering in 1967 and professor and head of department of electrical engineering in 1969. During his ten year sojourn at UMIST, working with a large graduate team, he developed the work in wave propagation to solve a large number of problems. These included analysis of the kilometric fault recovery transient, resonance due to tower effects in transmission lines, transient induction in communication cables near faulted high voltage d.c. cables, transient analysis of cross-bonded cables, radio interference profiles from power lines and calculation of energy dissipation in non-linear power system arresters. During this period, as a consultant to the Brown Boveri Company, he specified the design of the transmission line on the Cabora Bassa - Pretoria hvdc transmission line in order to permit the use of insulated ground wire communication.

In 1974 he was appointed Dean of the faculty of engineering at the university of Manitoba in Winnipeg, Canada. During this time he was appointed to the Board of the Manitoba Hydro Electric Corporation and in 1979 he became pro-tem chairman of the board for one year. He also established two major research centers, one in micro-electronics and the other in high voltage direct current studies. The latter, known as the Manitoba High Voltage D.C. Research Centre, has become world famous and is still flourishing.

In 1978 he was appointed Dean of Applied Science at the University of British Columbia on one year's leave of absence. In 1980 he was appointed to the board of the British Columbia Hydro-Electric Corporation and was also appointed head of the energy sub-committee. During this time he established the British Columbia Micro-Electronics Center and was also a member of the steering committee which established the engineering faculty at Simon Fraser University in British Columbia. In 1975 he joined the electrical engineering department at UBC as a full professor.

In 1995 he returned to Reyrolle in England, which by that time had become part of Rolls Royce Industrial Power Group, as head of protection development for a period of two years. His main responsibility in that position was to develop a new digital distance relay protection system. This project came to a successful conclusion and is now in commercial production.

Throughout his career he maintained strong industrial ties. He was an ongoing consultant to Reyrolle, the English Company and the North Western Gas Board in Manchester. He has been an occasional consultant to many organizations including the Swedish State Power Board, Brown Boveri, Siemens, Etibank in Turkey, The Sudanese Government, Eskom, Cepel in Rio de Janeiro and IIE in Cuernavaca in Mexico.

He has given graduate courses in Austria, Poland, Czechoslovakia, Rumania, Bulgaria, Turkey, Egypt, Sudan, Japan, Singapore, Australia, Brazil, Zimbabwe and Mexico.

He was successively British Regular member of CIGRE study committee 35, telecontrol, in England and Canada, he was on the British National Committee of CIGRE and a member of IEC- TC 57, Line coupling equipment. He is a fellow of the Institution of Electrical Engineers, a Fellow of the Engineering Institute of Canada, a chartered engineer in the UK and a professional engineer in the province of British Columbia. He received the award of the Bison for services rendered to the Manitoba Government and is an honorary citizen of the city of Winnipeg.

Upon his retirement he was conferred the title Dean of Applied Science Emeritus.

Martin Wedepohl
Westbank, BC, Canada
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