

HISTORY OF POWER TRANSFORMER MANUFACTURING IN INDIA

P. N. KOTINKAR, EX-GENERAL MANAGER, NEI PUNE



PRATAP KUMAR
VISIONARY TECHNOCRAT

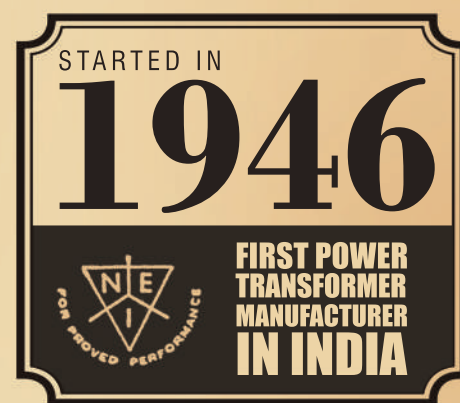
Transformers were for the first time in India, installed in the year 1897 by the Darjeeling Municipal Corporation. Till India's independence in 1947, there was very limited Transformer manufacturing activities that too, only covering Distribution Transformer upto 25kVA. The majority of small rating Distribution Transformers were imported, primarily from UK by Crompton Parkinson, Mumbai, GEC, Calcutta and Associated Electricals, Calcutta. Power Transformers were imported.

Mr. P. Kumar, technical founder of the National Electrical Industries (NEI), Mumbai and Managing Director of the NEI Group of Industries, had the unique distinction of being an Engineer, Administrator and Industrialist. Graduating from the well-known Imperial College of Science and Technology, London University in Electrical and Mechanical Engineering with Honours, he spent over 10 years in the U.K. and the European Continent with various large engineering industries, such as British Thompson Houston England, Associated Electrical Industries England, Foster Transformer and Switchgear of England in the Design Department having trained earlier with Brown Boveri of Switzerland and Siemens of Germany. During this association with technologically advanced

companies, the idea of pioneering in the manufacture of Power Transformer in India occurred to him. Upon return to India in 1946, he brought with him blueprint for setting up of the National Electrical Industries Ltd. (NEI) which started activities in the Ball Room of residential premises of Sir J B Petit Baronet, at Lalbagh, Parel, Mumbai. Mr. P. Kumar started NEI in 1947, India's first Power Transformer factory employing foreign expats. Although NEI also made Motors, major focus remained on Power Transformer and thereafter, for the next 20 years, N.E.I. was India's biggest manufacturer of Power transformers accounting for an aggregate of over 50 percent of the country's production.

Power Transformer manufacturing picked up in India in the 60s when H.E.L. Bhopal (now BHEL), TELK, Kerala, NGEF, Bangalore and CGL, Mumbai started making Power Transformers in India. It may be worthwhile to mention that the stalwarts who set up HEL (now BHEL) were all ex-NEI senior personnel trained under Mr. Pratap Kutmar. Mr. Kumar, believed to be the youngest Indian at 40 years age, was full Member of two leading Engineering Institution of the UK – the Institution of Electrical Engineers (M.I.E.E.) and Institution of Mechanical Engineers (M.I.Mech.E.), as well

PIONEERS IN THE INDIAN TRANSFORMER INDUSTRY



THE LEGACY CONTINUES...



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CTR

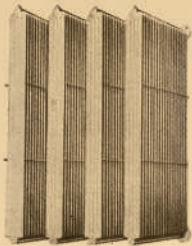
MAKERS OF



MILLING CUTTERS



TAP CHANGERS



RADIATORS

& ASSOCIATED EQUIPMENT

as the Member of American Institute of Electrical Engineers. He was nominated by Government of India to the Development Council of Heavy Electrical Industries, planning for the future growth of heavy industry in India.

He sensed the need of growing Power Transformer requirements. Hence in 1961, Mr. Kumar set up the Wendelside National Conductors Ltd. (WNC) at Pune for making the Copper Conductors used in Power Transformers and Motors. With increasing loads and transmission distances, India had started experiencing Voltage drops. Further as capacities of Transformers increased, better heat dissipation was essential. Considering both the need, Mr. Pratap Kumar went for backward integration and established in 1964, again for the first time in India, CTR Manufacturing Industries at Pune to make 33kV and 66kV Onload Tapchangers (OLTC) in collaboration with English Electric, UK and Pressed Steel Radiators in technical collaboration with Machinofabrik Wisben GmbH Germany.

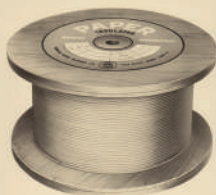
So, by 1966, the establishments set up by Mr. Pratap Kumar offered majority of the value chain of Power Transformer – NEI making Power and Distribution Transformer, WNC

Distribution Transformer, WNC making Copper Conductors and CTR making OLTC and Radiators. Onload Intank Tapchanger was seen as a growing market and consequently introduced in 1996. The need for transformer Fire protection was fulfilled by CTR for the first time in India in 1996. CTR patented for the first time in 2006 transformer Explosion prevention system for oil filled transformers. Bushings, monoblocks and Off circuit tap switches were introduced in 2012. NABL accredited, In-house R&D Center including laboratory upto 765kV was set up at Nashik in 2014.

The Indian Power Transformer industry kept on growing from there onwards and with more than 2,00,000MVA annual production, today India's Power Transformer industry stands amongst the 3 biggest in the world with Transformer of Voltage class upto 1200kV and power ratings upto 500MVA single phase. India today has more than 50 Power Transformer manufacturers and more than 350 organised Distribution Transformer manufacturers.



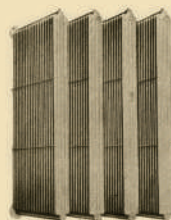
NEI
Power Transformers



WNC
Copper conductor



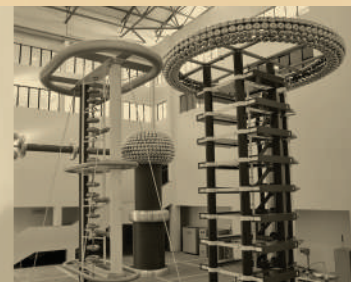
CTR
Tapchangers



CTR
Radiators



CTR
Fire system



CTR - Research
and Development Center



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