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508 Gordon Road,  
HASTINGS

Secretary. Ian Grover.

October Newsletter.

N.Z. INSTITUTE OF ELECTRICIANS (Inc.)

Hawke's Bay Branch

On Wednesday the 12th of October at 7-30p.m., members of the Branch are to be the guests of Watties Canneries. We are to meet at the can plant door, near Watties pedestrian crossing in King St, North, Hastings.

Mr. Paul Buck, the Can Plant Electrician has kindly offered to show us the newly installed Soudronic Can Maker. This machine is solderless. It is intended to explain the plant's operation from the upstairs office passage windows overlooking the factory then go down to the factory floor. Management have asked for all visitors to wear protective footwear and refrain from taking alcohol prior to the meeting. Apparently the lacquer fumes and alcohol react.

**Please** keep the 9th of November free as our Annual General Meeting is to be held at the H. B. Community College

### The History Of Napier Municipal Electricity Department.

Before starting the facts one should remember that in 1904, Napier Borough was 1270 acres. This was the old Port Ahuriri, the Hill and between the beach and the present railway line. In 1908 the land between Wellesley Rd and Nelson Cres. came into use.

In 1910, the Borough decided to install an electric lighting and power plant together with a tramways system, and Mr. Fred Black, A. M. I. E. E. of Wellington was engaged as consulting engineer. A licence to reticulate the Borough of Napier as it **then** stood was obtained in June, 1911. Napier South was not ready and, therefore was not included.

### Power Station.

The power plant **first** consisted of two 400 h.p. gas producers, three 215 b.h.p. Westinghouse gas engines, together with the necessary swithgear, and a balancer set for 400 V. - 230 V. supply. In 1916 a 150 b.h.p. Willons Robinson diesel engine coupled to a 100 kW. D.C. generator was purchased from the Miramar Borough Council and installed; this unit gave wonderful service and was in use up to 1931. During the same year a battery was installed and used for D.C. supply or floating with the engine on the tramway supply.

In 1917 the load **had** increased to such an extent that it was decided to increase the size of the power station and install a additional plant, so in 1919-20, two 450 b.h.p. Premier gas engines, coupled to 300 kW. D.C. generators were added and a new 1,200 h.p. gas producer purchased.

By the middle of 1922, it was realized that further extensions to the power plant would soon be necessary and the Council decided to call in Messrs. Hay and Vickerman, consulting engineers, of Wellington. The late Mr. J. G. Lancaster came to Napier and, **after** making a thorough investigation, and **having** an mind that power from Waikaremoana was likely to be available within a few years, recommended the installation of the following:

- (a) A diesel engine of 600 b.h.p coupled to a 400kW., 3,300 V. A.C. generator.
- (b) Two synchronous motor convertors, each of 200 kW., 550 V. on the D.C. side with 300 kW., 3,300 V on the A.C. side.

The Council adopted the recommendations and called **tenders**. The engine purchased was a Fullagar diesel, **and** this, with the motor generators and Reyrolle switchgear, was installed in 1925. there were, however quite a lot of teething troubles experienced with the engine and it was not until 1926 that general use could be **made** of this unit.

The engine **now** running under arrangements with the State Hydroelectric Department and it is worth recording that in November, 1950, when Sir George Nelson, managing director of the English Electric Company, visited Napier, he said that there only two engines of this size built.



One had been in use at the English Electric works in England and had recently been placed in the company's Museum. Sir George was, therefore, very interested to see the other unit still running in Napier.

The Council, in 1924, on the recommendations of its officers, again decided to call in the consulting engineers, Vickerman and Lancaster (by this time Mr. Hay had left the firm and Mr. Lancaster had become a partner) to advise them on the advisability to changing over the reticulation from D.C. to A.C.

The local officers had made the suggestion that the work be done in sections spread over years, but Mr. Lancaster recommended the complete change-over and considered the job could be completed in one year. The necessary licence was gazetted in July, 1925, for a period of 42 years from the date of the Gazette and the conditions of the change-over were set out -e.g., who was responsible for the cost of the work, the method of dealing with disputes. The work commenced in 1926 and was carried out by the Council's staff and supervised by their officers.

By 1924 the Hawke's Bay Electric Power Board was formed and negotiations were entered into between the Board and the Council regarding the supplying of power in bulk. After considerable discussions the Council agreed to purchase power from the Board, and power was supplied by the Board to the Council's power station in July, 1927.

This power was brought from the Government Substation at Redcliffe by two aluminium steel-cored feeders 6/.188 Al. and 7/.06 steel with an overall diameter of .564 in. carried on Bates steel poles. The length of the line was 7.67 miles and the feeders terminated on a steel structure in the power station yard. Here it was stepped down from 11,000V to 3,300 V. by two banks of single-phase transformers each of 400 kVA. capacity. From the transformers the power was carried by underground cables to Reyrolle switchgear in the power station, the metering being on the 3.3 kV. side.

The contract entered into between the two parties made provision for the Borough to use its own plant for a period, but, in general, the Borough could not reduce peak. The term of the contract was for five years, and the rate was ;  
First 200 kVA. at £2.10s.0d. per quarter.  
Over 200 kVA. at £2 per quarter.  
Plus a service charge of £187. 10s. 0d. per quarter.

This account is part of a story written by Mr. D. H. Hastie , who was the electrical engineer to the Napier M. E. D.

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Members wish George Metcalf a speedy recovery after his recent operation.

See you all on Wednesday 12th at 7-30 p.m.

Remember to mark off your appointment date for the A. G. M.