

## FIRST REVIEW OF THE PROCEEDINGS

— OF —

## The Southland Electric Power Board

For the Period from

JANUARY 15th to OCTOBER 31st, 1920.

The proclamation of the Governor-General constituting "The Southland Electric Power District" was gazetted on November 19, 1919, and by such proclamation the date of the election of twelve members to represent the different portions of the district was fixed for Saturday, 20th December, 1919. The result of such election was the return of the following gentlemen to sit as "The Southland Electric Power Board":—Hon. A. F. Hawke, and Messrs R. A. Anderson, E. Bowmar, T. A. Buckingham, J. Cody, H. Fowler, T. Fraser, W. Hinchey, W. Norman, R. A. Rodger, A. W. Rodger, and F. Young.

## —First Meeting of Board.—

The first meeting of the Board was held on the 15th of January, 1920, at which meeting Mr A. W. Rodger was appointed chairman; Mr C. Campbell, being appointed clerk and treasurer (pro tem), and the National Bank N.Z., Ltd., the Board's bankers for the time being. The report of the Southland electrification committee, together with a statement of the expenditure amounting to £3460 7s 4d, was laid before the Board, and it was decided that the report be received and adopted and that the above-named sum be taken over by the Board as a liability. The sum mentioned included the survey fees and all other preliminary expenses incidental to the investigation of the hydro-electric possibilities of Southland, the enactment of the needful legislation and the formation of the district as well as a general canvass for support to the scheme.

## —Adoption of Schemes.—

The Board decided to visit the site of the Lake Monowai scheme in company with Mr L. Birks, the chief electrical engineer of the N.Z. Government, and Mr F. C. Hay, who had acted as consulting engineer to the electrification committee, and this visit was made on the 23rd and 24th and 25th of January, 1920. The result of such visit was that the Board decided to adopt the No. 2 Monowai scheme as recommended by Mr F. C. Hay. This was done at a Board meeting on February 5th, 1920, and at the same meeting it was resolved that a poll of the ratepayers be taken immediately for authority to borrow the sum of £1,500,000 for the following purposes:—£400,000 for generation and transmission of electric power at and from the Monowai river to three sub-stations; £800,000 for the erection of say 2000 miles of distribution lines; £300,000 for future extensions, assistance to consumers and trading, etc. This poll was taken on the 27th of March, 1920, the result being that 6516 votes were cast in favour of the proposal and only 415 against.

## —Transport.—

The Board having in view the necessity for adopting the most efficient and economical means of transportation of the large quantities of materials and plant from the railway terminus at Tuatapere to the Monowai headworks, instructed Mr Hay to arrange for a representative of Messrs Hatrick and Co., experts in navigating the Wanganui river, to accompany him with the object of investigating the possibilities of navigating the Waiou river for transport purposes. The report received from Mr Hay and Captain Allen, the navigation expert, while indicating that the navigation of the Waiou river is quite a feasible proposition, also made it clear that the Board would not be justified in adopting this method of transportation in carrying out the Monowai scheme. The further investigations of the engineers have proved conclusively that, for the steady work required between Tuatapere and Monowai, traction engines present, from every point of view, the best means of haulage, while for the varying requirements in connection with the distribution of poles and other materials throughout the district to be served by the Board, motor lorries are to be preferred. These recommendations have been approved and adopted by the Board.

## —Access to Works.—

Direct access by road to the Monowai head works from the railway terminus is of paramount importance, and it is also essential that such road should be kept in the best possible repair in order that there should be no delay or inconvenience in transporting the necessary materials and plant, and the Board there-

fore decided to make a proposal to the Wallace County Council that it should for the period of construction of the works, control the Tuatapere-Sunnyside road, put it in thorough repair and keep it in such good repair, thereafter handing it back to the Council. The question as to the respective responsibilities of the Government, the Council and the Board to be determined later. This the County Council agreed to and the road from Tuatapere to the Waiou river at Sunnyside is now completely gravelled and in thorough order. The access across the Waiou river and beyond to the head headworks—a distance of over four miles—will be met by means of suspension bridge and a new road, and both works are now well in hand.

## —Method and Time of Construction, Load Estimates, etc.—

On February 11th, 1920, Messrs Hay and Vickerman, at the request of the Board, submitted a full report on the method to be adopted in carrying out the work of construction and the approximate time that would be required for completion of the whole scheme. The time was set down by Messrs Hay and Vickerman at three years. This estimate was corroborated by Mr L. Birks, the chief electrical engineer of the Dominion. On the 24th of February, 1920, and F. C. Hay was appointed consulting engineer pending the taking the loan poll and permanent engineering appointments being made; and in order to ascertain, as accurately as possible, the actual mileage of distribution lines required to cover the whole of the area proposed to be reticulated and the approximate load or demand for power existing within such area, it was decided to have a rapid survey made by six engineers, in motor cars, assisted by men thoroughly acquainted with the respective areas within which these engineers were to operate. The result of this survey showed that the total mileage was 1660 and the possible revenue from the consumers, £195,000 per annum.

## —Board's Permanent Officer.—

On March 30th, 1920, the appointment of Mr C. Campbell as clerk and treasurer of the Board at a salary of £500 per annum was confirmed.

## —Survey and Design of Headworks.—

On the same day an offer was made by Messrs Hay and Vickerman, in response to enquiries from the Board, to carry out the survey and design of the engineering work up to the turbine half-couplings, including plans, specifications, estimates, etc., at a fee of 2½ per cent. on the estimated cost. This was accepted by the Board.

## —The Agreement.—

Messrs Hay and Vickerman, having been most highly recommended to the Board, they were requested to and did on April 27th, 1920, lay before the Board the terms and conditions upon which they were prepared to undertake the work required by the Board: (a) in connection with the survey and design of the whole scheme including generating works and the transmission and reticulation of the power throughout the whole of the district to be supplied by the Board; (b) the control and supervision of the actual construction of the works and distribution lines. Details of the arrangement were fully discussed and considered in committee, and with the engineers, an agreement entered into—which was not, however, finally executed until the 17th of July last—in which the following are the main provisions:—

1.—As remuneration for the first portion of the work, namely, the survey and design, a payment shall be made equal to 2 per cent of the estimated cost of the work. This to cover and include the survey and design of the generating works up to the turbine half-couplings previously entrusted to Messrs Hay and Vickerman for a fee of 2½ per cent. of the estimated cost. For the second portion of the work, namely, the control and supervision of the construction, the engineers shall be paid a sum equal to three per cent. of the estimated cost. In effect, therefore, Messrs Hay and Vickerman receive a fee in the aggregate amounting to five per cent. of the estimated cost of the scheme, such estimated cost not to include their own fee. The engineers, for such fee, provide all the engineers

both civil and electrical, and all labour in connection with the survey and design, and supply to the Board all plans, drawing, specifications, and estimates, of quantities and costs; and in connection with the construction they will provide, at their own expense, all surveyors, resident and assistant civil and electrical engineers and draughtsmen, chainmen, and others down to but not including inspectors, and are wholly responsible for the speed, cost, and proper construction of the work. It is also provided that, after the design is completed, one of the partners of Messrs Hay and Vickerman will give his whole time to the Board's work. The time stipulated in the agreement for the construction of the work is 3 years, but should such construction be delayed for reasons and causes beyond the control of the engineers—beyond 3½ years, it is provided that the engineers will be entitled to additional remuneration, which, failing agreement between the parties, is to be settled by arbitration. If for any reason the Board should decide to cease work provision is made for the payment to the engineers of 3 per cent. on the actual work done only. Progress payments will be made to the engineers in respect of their remuneration up to and not exceeding seventy-five per cent. of the actual work done from time to time.

2.—It is provided in the agreement that the design, including the plans and specifications of the scheme, shall be submitted to and approved by Mr Terry, until lately chief electrical engineer of the Dominion.

3.—The engineers are entrusted with the management and superintendence of the whole of the construction work on the lines and principles laid down by the Board and in accordance with the Government regulations. They have full charge of the construction department and will institute such costing systems, staff organisation, transport systems, store-keeping and time-keeping methods as may from time to time be found necessary or required by the Board.

4.—The engineers will call for and advise the Board on all tenders for the supply of plant, materials and stores, and will report periodically on the progress of the works, giving detailed statements setting out the actual cost of the work done together with the estimated cost of the same work.

5.—The engineers are required to so carry out the construction work as to ensure that the whole of the area to be reticulated will receive the energy simultaneously, provided that the Board may at any time require any part or parts of the area to be reticulated before the others.

6.—The engineers shall engage and control the whole of the construction staff subject to the approval of the Board, and under this clause the Board has decided to fix the salaries and wages to be paid by the engineers, leaving the selection and appointment of the men to the engineers with the special instruction that whenever possible appointments should be made from local applicants.

## —Sawmill.—

On April 27th, 1920, the engineers were authorised to purchase the needful plant for the erection of a sawmill at Diggers' Hill, approximately six miles from the headworks. The transportation of the plant across the Waiou river involved the erection of a punt. The securing of a lease from the Crown of a sawmill area was also necessary. All of these matters have been attended to, while the timber required for bridges, culverts, temporary and permanent buildings, etc., will be cut at Diggers' Hill, the main output of the mill will be for the staves for the pipe line to convey the water from the weir on the Monowai river to the penstocks at the power house on the Waiou river. The sawmill has been in working order and cutting timber for some two months, and the formation of the tramway from the sawmill to a point on the main access road, about four miles from the headworks, is well in hand.

## —Consumers' Installations.—

The Board has resolved that as soon as supplies of the necessary materials have been arranged for, contracts will be entered into with consumers for their installations, the Board advancing the money until the power is made available, when the consumers will have three alternatives: (1) to pay the whole cost of such installation; (2) to pay such cost by instalments, or (3) to pay rent for the use of such installation. Consumers may, of course, make arrangements apart from the Board, but subject to the Board's approval, for the installation of their electrical service, but in such cases the Board will not lend monetary assistance.

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## —Local Authority Supply.—

The policy of the Board is to encourage existing local authorities within the Electric Power District to increase existing electrical plant or install temporary generating machinery with the object of encouraging consumers within their boundaries to link up immediately, so that when Monowai power becomes available the greatest possible demand will be forthcoming from each and all of these sources. With this object in view the Board may find it advisable to erect the lines between two or more towns in one of which generating plant already exists, and between the controlling authorities of which an agreement is entered into for the supply and demand of the power. The lines thus erected will serve the purpose of the local authorities pending the completion of the Monowai scheme, but will be, in reality, part and parcel of the Board's scheme as a whole. It is also the desire of the Board to assist the local authorities to obtain their supplies for reticulation purposes in every way possible.

## —The Work Ahead: The Board's Policy.—

At the meeting of the Board held on 6th July, 1920, the Chairman submitted the following statement for consideration:

"The time has now arrived when the Board should fully consider the work ahead. First, that which may be required of the Board by the engineers in connection with the work of construction placed in their charge, and second, most important work that must be carried out independently of the engineers, but which must synchronise and dovetail into the construction work so that the whole may be completed simultaneously.

"The principal duties of the Board so far as construction work is concerned will be the provision of materials, plant, and machinery required by the engineers, the consideration of their progress reports, payment of accounts, and general supervision. Very considerable expenditure will be involved and deliveries of materials and machinery will be required expeditiously and according to timetable.

"As to the work of the Board apart from construction, but during the period prior to its completion, this may be summed up in the one word 'Revenue.' It involves, however, great organisation and expenditure of money, time, and thought. The Board has approved the principle of financing the consumers in respect of their installations until the power is available, and this decision will undoubtedly have a considerable bearing on the increased revenue forthcoming before the scheme is completed.

"It must be appreciated by the Board, however, that it is quite useless—in fact impossible—to attempt to further canvass for consumers and enter into contracts for wiring the houses and the supply of appliances until the Board has itself entered into contracts for the wholesale supply of all these requirements. The members of the Board need only think for one moment to realise the magnitude of all this undertaking:—Wire, conduit, plugs, switches, lamps (of all descriptions), heaters, cookers, irons, motors, etc., etc., and these for thousands of different consumers will be needed. It is assumed in this statement that the Board is itself going to carry out the work of installation and the supply of goods, and this is one of the questions that require immediate decision.

"A further essential preliminary to a canvass being entered upon and contracts being entered into in respect of installation is the ratification by the Board of the undertakings with consumers entered into by the Southland Electrification Committee.

"The magnitude of the requirements of the Board suggests that it should consider whether it will deal through accredited agents of the manufacturers or get into direct touch with them. If the latter is decided upon, how is it to be carried out, and this does not only apply to the immediately preceding paragraph, but also to the machinery, poles, wire, insulators, etc., required by the engineers.

"The character of the work of the Board is purely commercial, and the whole undertaking may be likened to a large commercial company controlled by a board of directors. Every such undertaking has necessarily a managing director or manager to conduct the business, and the Board should now decide whether

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