

1930.
NEW ZEALAND.

ARAPUNI HYDRO-ELECTRIC-POWER WORKS. GEOLOGICAL REPORT

(TOGETHER WITH STATEMENT BY THE HON. W. B. TAVERNER, MINISTER OF PUBLIC WORKS).

Laid on the Table of the House of Representatives by Leave.

I DESIRE to lay on the table the geological report on the fracture of the rock at the Arapuni Spillway.

I also wish to say that, apart from the suggestions made in this report, an investigation is actively in progress on the water content and elastic content of the various materials in the neighbourhood of the dam and power-house.

Already there has been obtained information which indicates that the material has about one-tenth the elasticity of concrete, and a value which agrees with the conjecture that, after the initial crack in the forebay had been formed, the block between the forebay and the gorge bent over as a result of hydrostatic force. The present investigations are aimed at an estimation of the behaviour of the pumice breccia and rhyolite under different degrees of moisture content. One possibility suggesting itself is that water seeping into the rhyolite and breccia caused volume alterations, which, possibly, resulted in the original crack. This, and other investigations, are being actively pursued with a view to ascertaining more definitely the original cause of the disturbance.

I have submitted the geological report to my departmental Engineers, and I have asked them to now supply me with a report, based on the geological position, indicating what steps they consider should be taken from an engineering point of view to deal with the trouble that has occurred. This engineering report will be submitted by me to Professor Hornell, the expert from overseas who has been appointed by the Government to investigate the Arapuni scheme, in order that he may advise on the steps suggested by the Department.

THE FRACTURE OF THE ROCK AT THE ARAPUNI SPILLWAY.

We (Professor Bartrum, and Drs. Marshall and Henderson) arrived at Arapuni on the morning of the 23rd June, and left on the evening of the 25th June. We examined the Arapuni area generally, paying special attention to the area about the spillway and the power-house where cracks had recently formed and tilting occurred. Mr. Rabone, Engineer in Charge, and his staff, gave every facility for examining the works, plans, and records, and we take this opportunity of expressing our thanks and appreciation of the courtesy everywhere extended to us.