in our report. The advantages of steam as compared with gas in this case are as follows: The decreased capital cost involved. The utilization of natural gas with coal as a standby in case of failure of pipe line. The establishment of a plant in which every item has been tried out for years and in which no experimenting is necessary, and the greater probability of quick deliveries of apparatus."

Ottawa, Ont.—In regards the petitions that have been received from the landowners on a number of streets asking to have tarvia macadam streets constructed, Controller Nelson issued the following statement: "What we propose to do in these cases is to construct a more substantial roadway than the tarvia macadam as used on the Improvement Commission driveway. We propose to build up the streets of broken stone as in the case of the ordinary macadam road. Then have six inches of smaller broken stone mixed with tarvia and above this two inches of tarvia and very fine stone, covered with a layer of tarvia and dust. This, it is believed, will prove most satisfactory, making over eight inches of solid composition of broken stone and tarvia. The residents along Center Street who petitioned for an asphalt pavement last fall are now endeavoring to have it changed to this kind of roadway, which will be less expensive, not nearly as dusty, not so noisy, and does not require sprinkling. It is the intention of the works department to make several experiments in regard to the use of a simple top dressing of tarvia and dust along other streets. Last summer, on Mutchmore Street, west of Bank Street, we had the street swept and a thin coat of tarvia and dust put on. This was done only once, yet to-day, going along Mutchmore Street in this section, you will see the effect still remaining, and in places it is as smooth and hard as the top face of asphalt. We think that if this were done continuously for a number of years it would form a solid face on the street that would be as good as pavement. We are going to try it on Wurtemburg Street, from Rideau north to the end of the street; on McLeod, from Elgin to Bank Street, and on Fourth Avenue, west of Bank. This will be done out of general fund, less what will come out of the sprinkling that will be saved on these streets. The permanent tarvia macadam will be done under local improvement.

Regina, Sask.—Despite the general financial stringency, which is but slowly loosening up, building operations are in full swing in this city. The steel work has been completed now on the ten-story McCallum Hill building, and work is being rushed on putting on the tiling floors. The announcement has been made with respect to the change of plans of the Grand Trunk Pacific Railway. This company intended to erect a nine-story hotel at a cost of $1,000,000 and a two-story station. The hotel as originally designed will be erected. The station, however, will be much more elaborate. It will be a five-story structure, according to the official announcement, and it is now proposed to join the station and the hotel by means of a well-equipped underground passage. It is generally understood that the total cost will be well over $2,000,000. The Dominion Government has decided to dredge the Qu'Appelle River where it links up with the Fishing Lakes in the vicinity of Fort Qu'Appelle, and to construct three dams, which will considerably increase transportation facilities. The Provincial Government is draining the Wascana Lake in order to lay pipes for a reserve water supply for the Parliament buildings. Construction work on the street railway extensions has already been started, and at the present time there are about one hundred men at work, and in the course of the next month and a half it is expected that there will be at least four hundred employed. Altogether, $825,000 will be expended by the city on street railway work.

ELECTRIC DEVELOPMENT UNDER AN UNUSUAL HEAD OF WATER.

The Swiss, as a nation, are generally given credit for being the leaders in the design and manufacture of electric machinery designed for use under high heads of water. Word comes to hand of a power development scheme which outdoes, in the use of an available head of water of 5,412 feet, any previous development of which the writer is aware.

Mr. Boucher, of Lousanne, Switzerland, a civil engineer who has designed many other water power schemes with comparatively high heads, and who is a member of the board of the Society of the Electro Chimie, of Paris, has persuaded them to carry into execution the conversion of the water power of the Lake of Fully, near Martigny, in Canton Wallis, Switzerland, with a head of 5,412 feet, into electric energy. The execution of this project has been fully resolved upon, the work commenced, and the orders for the necessary materials placed.

The most interesting question in connection with this scheme arose when deciding in what manner the pipe line should be constructed in order to withstand a pressure of 2,425 lbs. per square inch at the lower end. However, a most satisfactory, as well as perfectly simple, solution was found.

The pipe line in a length of about 2¾ miles consists of pipes with inside diameters of 19 11/16 inches and 23⅝ inches, and thicknesses of from 15/64 inch to 1 25/32 inches. The pipes of the upper section will be of the well-known water gas lapwelded type, whereas those of the lower part will be seamless.

These seamless pipes, which are drawn in strong drawpresses from a steel ingot, and which can be made up to the largest diameters, offer as high a security as one could wish on account of their perfect homogeneity, especially for schemes of such high demands as the present.

The turbines for 15,000 horse-power will be built by the engineering firm of Piccard, Pictet & Company, Geneva. The construction of the pipe line is in the hands of Thyssen & Company, who possess at Muelheim-Ruhr extensive steel, plate, and tube works, as well as a water gas welding plant for large pipes, and where a great many pipe lines for water power plants have already been constructed.

PERSONAL.

MR. J. J. ANTONISEN, city engineer of Moose Jaw, Sask., has been appointed street railway commissioner at Brandon, Man. Mr. Antonisen is a graduate of Leipzig University and formerly divisional engineer for the Canadian Pacific Railway. Prior to going to Moose Jaw he was city engineer at Port Arthur, Ont.

MR. J. E. ASKWITH, assistant city engineer of Prince Albert, has been appointed first permanent town engineer of Redcliffe, Alta.

STANLEY H. FROME, resident engineer of the Grand Trunk Pacific Railway at Calgary, has been appointed to the staff of the city engineer of that city. Mr. Frome's work with the city will be connected with taking soundings and the construction of concrete bridges.

MR. W. W. BELL, until recently chief assistant to Major Hodgins for the construction work of the Grand Trunk Railway, has been appointed engineer for the construction of the Banff-Windmere Road.