The main storage dams for No. 1 plant are at Pockwock and Wright's Lake. The Pockwock dam will be about 1,150 ft. long and of height sufficient to effect 12 ft. storage on the lake. This will be a timber dam. The Wright's Lake dam has already been built by the Halifax Power Co., a company which started to develop the Northeast River a few years ago. It consists of concrete weirs and sluiceway and a concrete-cored, earth-filled dam. The small dam at the foot of Little Indian Lake will be of timber construction.

When No. 2 plant is built, the power dam at the foot of Sandy Lake will be a concrete-cored earth dam with concrete overflow weirs, sluiceway and intake. The dam will be 320 ft. long on the crest and the extreme height above river bed will be 27 ft. The pipe line to No. 2 plant will have a surge tank separate from that on No. 1 pipe line.

The main storage dams for No. 2 plant will be at Big Indian, Island and Five-Mile lakes. The latter two will be low timber dams, but the Big Indian dam will be 25 ft. high (maximum) and 1,200 ft. long, of timber construction with earth embankment and a puddled clay core wall.

A surge tank will be built on No. 3 pipe line approximately 400 ft. from the generating station. Where emerging from the dam, the conduit will be protected from flood by a wall in the stream bed and will be carried beneath the railway in a new culvert.

Must Be Completed This Year

The generating stations will have isolated massive foundations for the generating units, and heavy concrete wall construction. The widths of buildings and lengths of bays are similar for all three plants. The beams for roofs and floors are standard sections and lengths, requiring no fabrication. The Halifax receiving station will be of brick, stone and concrete. Construction must be carried on to complete the Tidewater plant first,—by January 1st, 1921. The receiving station must also be complete by that time, and the Mill Lake plant by June 1st, 1921. The dams must be completed in time for handling flood water in season. Bush must be cleared to 25 ft. on each side of centre line of conduits and to a distance of 20 ft. from walls of other structures.

The sea face of the Tidewater station will be approximately on the mean tide shore line. Cofferdams required can be built on dry bottom at low tide. The tail-race excavation beyond low tide line will not exceed 2 ft. below low tide level.

The wing wall for the Mill Lake dam parallels the railway, and train fill may be utilized in constructing the wall, which will have a concrete core and which will be for the purpose of protecting the railway.

Specifications and Costs

The specifications class concrete under three heads: (A) Mass concrete over 27 ins. thick; (B) concrete over 10 ins. and not more than 27 ins.; (C) thin concrete, 10 ins. or thinner.

Proportions required are as follows: Class A, 1:3:5 (broken stone) or 1:7 (gravel); class B, 1:2½:4½ or from 1:6 to 1:5; class C, 1:2:4 or from 1:5 to 1:4.

For use in dam sections, buttresses, piers, heavy walls and foundations, the stone must pass through a 2½-in. ring. For use in walls, etc., 15 ins. thick or less, the stone must pass through a 2-in. ring; for use in floors and slabs, a 1-in. ring.

The power plant roofs are to be of concrete, surfaced with an approved standard roofing, subject to a 20-year bond.

Minor equipment and construction to be supplied by the Nova Scotia Power Commission and not to be included in the general contract for which tenders are now being received, include steel pipe distributors,—that is, two lengths of steel pipe from each conduit to the main turbine valves; steel thimbles for pipe connections (one 72-in. and one 120-in. thimble to be placed at the respective intake houses); electric water heater device to be installed on water service in generating and receiving stations; two 24-in. corrugated iron culverts for pipe line fills; excavation and culvert for pipe crossing under the Halifax & Southwestern Railway, below Mill Lake dam; excavation and culvert for pipe crossing under Coast Road nead Tidewater generating station; cross-over channel from Little Indian Lake to Mill Lake; and the dam at the foot of Little Indian Lake.

Sidings are now in place at French Village station and near Little Indian Lake on the Halifax & Southwestern Railway, and good roads lead from the sidings to Tidewater station, Mill Lake dam and Coon Pond dam. A short road will have to be built to Mill Lake generating station. The pipe line from Coon Pond to Mill Lake has already been graded for nearly the whole distance by the Halifax Power Co.

The estimated cost of the entire development is $1.-050,000; and of plants No. 1 and No. 3, $767,000. The latter figure includes Mill Lake dam, No. 3 pipe line, Tidewater generating station and equipment, storage dams on Indian River, cross-over channel, two transmission lines to Halifax, receiving station in Halifax, operators' houses, Pockwock Lake dam, Coon Pond dam, roads and sidings, No. 1 pipe line, No. 1 generating station and equipment, contingencies, engineering, supervision, inspection and interest during construction. The above figures do not include the acquisition of the rights of the Halifax Power Co. and of other required rights, all of which may cost $250,000 or less. Assuming this figure, the yearly operating charges are estimated at $143,500 for plants No. 1 and No. 3, or $180,955 for all three plants, including interest, sinking fund, depreciation, management, renewals and supplies, operating expenses, insurance, etc. This will be between 0.6 and 0.7c. per k.w.h. if all available power be sold.

The members of the Nova Scotia Power Commission are Hon. E. H. Armstrong, of Halifax, chairman; F. C. Whitman, of Anapolis; and R. H. Mackay, of New Glasgow. K. H. Smith is chief engineer and secretary. C. H. and P. H. Mitchell, of Toronto, are the commission's consulting engineers.

TO MANUFACTURE ENAMELLED WIRE IN CANADA

FORMAL announcement has been made that an enamelled copper wire plant is being added to the factory of the Eugene F. Phillips Electrical Works, Ltd., Montreal, and that it will be in operation within two months. The Phillips company will, therefore, be the pioneers in Canada in this class of wire, which is now entirely imported.

The Canadian market for enamelled wire has been growing on account of the greater production of fractional horsepower motors and other coils where space is limited. Enamelling plants have a comparatively large capacity, however, and it is not likely that the demand will be sufficient to keep the new plant busy throughout the entire year, but Lawford Grant, managing director of the Phillips company, states that he will be satisfied if the plant meets only operating expenses at present, because it will complete their line of wire and will produce in Canada an article that has not hitherto been manufactured in this country.

It is rumored that the Canada Wire & Cable Co., Ltd., of Leaside, Ont., also intend to install an enamelled wire plant. Interviewed by *The Canadian Engineer*, F. J. Bell, president of that company, stated that the matter has been under consideration for some time and that the plant is now on order. Delivery is expected within two months. Questioned as to whether there will be sufficient business in this line to keep two plants busy, Mr. Bell stated that there is not at present, but that the demand is gradually growing.

The American Association of Engineers has 15,000 members and 5,000 applications pending. Although one of the youngest, it is now the largest engineering society on the American continent.

The thirteenth annual convention of the Canadian Gas Association will be held August 27th and 28th in Ottawa, Ont. George W. Allen, of the Consumers' Gas Co., Toronto, is secretary-treasurer of the association.