

## SESSIONAL PAPER No. 230

## EVIDENCE SUBMITTED AT THE HEARING IN MONTREAL.

As stated above the only testimony submitted was that of witnesses examined by the applicant. A very brief summary of this testimony will be sufficient, because as stated by Hon. Mr. Guthrie, there was not much between the parties upon the facts.

In the first place there is no doubt that the construction of the weir, if it be permanently maintained, will close to navigation the South Sault channel unless some alternative route be available. As to its effect on levels in the north channel, the following excerpt from Mr. Rickey's testimony is sufficiently explicit:—

"We will consider three stages of flow in the St. Lawrence river. We will first take the minimum stage, about 200,000 second feet. The effect of the submerged weir will be to prevent a large proportion of the water that would otherwise flow down the South Sault channel from passing through that channel and divert that water through the Big Sny channel into the main channel on the north side of Long Sault island. This statement assumes that the same quantity of water is drawn through the Massena power canal. When analyzing the elevations of the water at the weir for the stage of 200,000 second feet, we find that the water level at lock 21 will be raised about 3 or 4 inches, which is an improvement to navigation, because every inch of increased draft there is an assistance to navigation and particularly at low water periods of the year when in times past boats have had to lighten their draft in order to pass over the upper sill of lock 21. . . ."

"The average stage of the St. Lawrence is about 250,000 second feet. At such stage the water level at lock 21 will be similarly raised, but it is of no benefit to navigation because you already have some fifteen and a half or sixteen feet depth of water over the sill, but it is no detriment because it is at a little greater elevation and will allow boats to enter the locks somewhat more freely than they otherwise would.

"If now we pass on to the maximum stage of water in the river, we find that the rise at lock 21 is again substantially four inches. . . . Analyzing the river levels under these conditions, we then find that the coping of lock 21 will be about a foot and a half higher than the water level, so there is no danger of the water flooding the coping of the lock. Now having analyzed the low water conditions where we find an improvement, the average water stage where there is no detriment, and possibly just a little easier entrance to the lock, and the flood water stage where there is no damage done to the lock, it is my opinion that these works will be an improvement to navigation."

There is another effect of the construction of the submerged weir, and that is the raising of the level of the water in the power canal. As to this point Mr. Rickey says:—

"At an average stage of 230,000 second feet, with the canal discharging about 28,000 to 29,000 second feet, which is the quantity of water used when we are developing 89,000 horse-power, the water level without the submerged weir will be substantially at elevation 198. . . . After the submerged weir is built the water level under the same conditions will be elevation 202.5. The rise at the inlet to the canal will therefore, be 4.5 feet"

Further on he adds:—

"The Massena power-house is very well equipped with turbines and generators to determine the amount of water that we can apply to the coupling between the turbine and generator shaft, because if we put any more power on we will burn up the generators. In fact, we did that the other day. There was a slight accident, and it will take a few days to make the repairs. After the