

battery of seven boilers we found that when they ran one boiler constantly they made no smoke, but when the stacks from the seven boilers were turned into one stack they developed smoke. I have noticed right here in Toronto small plants where the loads were constant, that they could run without making any smoke, but a similar plant under similar conditions, but with a varying load, that they would have considerable difficulty with smoke. If at one time a plant is run without making smoke and at another time there is smoke it is evident that the conditions have been changed. There is no smoke with a certain proportion of air, certain proportion of coal and certain proportion of draft. If these conditions were maintained there would be no smoke, but if the load is increased and the various proportions of air, coal and draft are not changed accordingly, there will be smoke. To run a plant satisfactorily it is necessary to have suitable measuring instruments to determine the pressure of the air, its velocity, etc., in order to meet the varying conditions and adjust the supply of air, etc., to meet the necessary changes.

One Sunday about a year ago I visited a central heating plant in Detroit, and spent the whole day there. It was a stormy and windy day and they had to put on all the fire they could to keep the required pressure. Some of you may know where this plant is situated. It is right in the heart of the retail district and if they blow any dust on these stores they immediately get into trouble. I noticed that they were very particular about the air pressure, regulating it carefully in proportion to the amount of coal they were using. This was not done at one place in particular, but at each furnace, one furnace going wrong would make smoke, even though all the others were right.

Coming down to the cost of power per K.W.H., I will give you a few figures of costs I obtained in different tests. One plant using about 500,000 K.W. Their cost was 4c., another plant using about 1,000,000 K.W. produced theirs for 2.96c. The Chicago Edison plant, I believe, is about 0.35c. There are many plants producing a K.W.H. for 0.8c. down to 0.5c.

Unless Hydro-Electric power can be delivered without all the conditions that are attached to it, the steam plants producing power at these low prices are cheaper than the Hydro-Electric.

Mr. Helps,—

I had not the least idea that I was going to be called on when I came to this meeting to-night. I have listened to the