

quire steam for testing boilers, W.A.B. pumps, lubricators, injectors, and so on, and what about the heating of the plant? No means of doing this has been shown with the producer gas plant. Would it not be necessary with a power plant of this kind to also have a steam plant for the purpose that I have mentioned?

This is the reason why I think steam even with its low efficiency, would be the cheapest.

Chairman,—

I am sure, gentlemen, we are pleased to hear Mr. Duguid take the opposite side of the question. I think most of the large manufacturers of the present time are taking a great deal of interest as regards cost of power. The Grand Trunk Railway are making a study of this power question at the present time. While some favor steam, electricity, and others gas producers, yet it is a live question, and the discussions I have heard to-night have given me what I have sought for a long time.

Mr. R. J. Goudy is here to-night, and we shall be glad to hear from him.

Mr. R. J. Goudy,—

Mr. Chairman and Gentlemen:—While I expected to be present with you to-night, I did not expect to be called upon to make a speech, or address such an intelligent-looking audience as you have here to-night.

I don't know of any other pastime that could be better spent than to be present at just such meetings or organizations of this kind where there is some instructive topic arranged for discussion. I have listened with much interest to the paper just read by Mr. Armer on Producer-Gas, and I must say that Mr. Armer should be congratulated upon the able manner in which he has outlined to us the use of producer gas, which is growing so rapidly in favor in our country.

The economy of the gas engine operated by producer gas lies in the almost direct conversion of the energy in the coal into work, eliminating the several losses that arise when such energy must be carried through the various stages of the production of steam in converting coal into work, by means of the steam boiler and steam engine, the losses are both direct and indirect. The direct losses include unconsumed coal falling through the grates, chimney gases, unconsumed carbon in the form of smoke, loss of heat in radiation from the boiler and steam lines, loss in radiation from the engine cylinder and the final waste from the exhaust.

The indirect losses include steam consumed in injectors or boiler feed pumps, and in leakage.