

apply ourselves, develop new technology, and pay the price to get it done.

Mr. WAGNER. Yes; that is correct.

Mr. VIVIAN. Mr. Chairman, I have another question. You indicated that you produce fertilizer in the Muscle Shoals area. Is this fertilizer sold competitively in the open market?

Mr. WAGNER. No; not competitively, sir. The fertilizer that we produce is all used in research and educational demonstration programs. Some of it is sold but it is sold widely across the country and confined by contracts with the fertilizer companies and cooperatives that distribute it to uses which are new, which need promotion according to the views of the agricultural colleges and so on. So we do not regard it as competitive with the fertilizer industry.

Mr. VIVIAN. Does the fertilizer plant itself produce a polluting effluent?

Mr. WAGNER. Mr. Phillips is connected with the operation of that plant. Let me ask him to respond.

Mr. PHILLIPS. It certainly does potentially, and as Mr. Wagner has indicated, we have had quite a program going to solve the problems that we had in the control of this effluent.

Mr. VIVIAN. Do you feel that the effluent produced by this particular plant is comparable with the effluent produced by other commercially owned fertilizer plants?

Mr. PHILLIPS. In some ways it is and in some ways it is not because our particular type of operation there is quite experimental, and also we have some other responsibilities related to national defense which make our operation somewhat different.

Mr. DADDARIO. Dr. Gartrell, in your nuclear plants, have you solved the thermonuclear problems of waste heat that flows into the water?

Dr. GARTRELL. There is more waste heat per kilowatt of generation which has to be dissipated in some way, either discharged into a receiving body of water or handled by cooling towers. We consider this as just another design factor that enters into the design of the condensers and the location of the plant and the provision of adequate cooling water supply.

Mr. DADDARIO. Considering the water into which you can discharge this heat, have you figured out what effect it may have on fish and plant life?

Dr. GARTRELL. We don't anticipate any particular problem at this location. We are aware of the importance of limiting temperatures in streams.

Mr. VIVIAN. Suppose you generated the same amount of power by either nuclear- or coal-fired systems. How much difference would it make in the temperature downstream?

Dr. GARTRELL. We would design the plant in both cases to meet the same temperature control criteria.

Mr. VIVIAN. You say you get the same waste heat for the same amount?

Mr. DADDARIO. No; you dissipate about 50 percent of the fossil fuel heat through the stacks as I understand it; so you are already in a better position with fossil fuels in this particular area.

Dr. GARTRELL. I don't have the exact figures, but it is something in the order of 20 percent more heat which goes to the receiving streams.