

appetite for low-grade coal, and the subsequent fairly recent shifts of hydro to fossil-fueled steam power generation has set in motion a remorseless rending of vast areas of coal-bearing lands covering large areas of many states. The latest report of "Fish Kills by Pollution, 1966", published by the Federal Water Pollution Control Administration in 1967, indicates that approximately 17 per cent of all reported fish kills were due to mining operations. When one considers the vast scope of pollution-caused fish kills that have been reported to the Federal Government such mining operations are the second greatest causative factor exceeded only by the food products industry.

Mr. Chairman, since World War II there has been a tremendous increase in the size and capacity of individual power generating units and stations. Such is fundamental to the continuing low cost of electricity to the consumer. We realize that the size factors are among the most important tools available to an electric utility in its constant effort to limit or offset the effects of the continuous and rapid increases in the cost of doing business these days. There very apparently is great economic justification for the overwhelming trend of the utilities toward the use of larger and larger generating units and stations. We have observed that some 72 per cent of the total generating capacity now in order in this country (both fossil and nuclear-fueled) number 134 turbine-generator units, and 500 megawatts and larger. This portends the considerably increased use of mined fuels to operate these power electric stations.

Nationwide it is estimated that approximately one million acres of land have been activated by coal strip mining and that this is increasing at a progressive rate between 20,000 acres per year to reach a rate of 30,000 acres per year by 1970. At a Strip-Mine Symposium held at Ohio Agricultural Experimental Station (Wooster) in 1962 the principal speaker was Dr. Wilhelm Knabe, Soil Scientist with the West German Federal Research Experiment Station for Forestry and Forest Products (Reinbeck). Dr. Knabe stressed that West German laws require the pre-planning of reclamation, their most important aspect being separate disposal of top soil in order to cover the soil banks after grading and providing basis for good crops.

There are many cases of fish kill resulting from mine pollution but one of the most devastating reported of sport fish in the State of Pennsylvania's history occurred on the north Branch of the Susquehanna River back in 1961. Fish Commission personnel estimated that at least 116,280 fish including 15,116 legal-sized walleyes and 14,053 bass were killed in a 55-mile stretch of the River. The State Sanitary Water Board determined that the lethal pollutants resulted from the pumping of mine acid wastes into the river by the Glen Alden Mining Corporation. A fine of \$58,504.50 was assessed as proper payment for the fish killed.

The Tennessee Valley Authority sometime ago recognized the seriousness of its strip mining activities and initiated studies and experimental reseedling to restore stripped areas to productivity. They worked with experimental conifer planting on 10-acre stripped test plots (at the rate of 1,700 seedlings per acre) and found first year survival rates ranging from 39 per cent for short leaf pine to 84 per cent for Virginia pine. Ultimately they worked with five different species and found a 60 per cent survival rate. They also determined that grading improved the survival. They concluded that restoration methods must be refined and intensified but did hold considerable promise. Knowledge to accomplish the immediate large-scale directive action for reclamation of mined areas on the part of the strippers has been available. Extensive demonstration of such was undertaken about 17 years ago in southern Illinois as a cooperative project of the University of Southern Illinois, Sport Fishing Institute, Wildlife Management Institute, the Illinois Conservation Department, the Illinois Coal Strippers Association, and the Truax-Traer Coal Mining Company. Similar work has been done in Ohio, as well. Therefore, the public and coal-consuming public agency should not permit the alleged need for research to become a smoke-screen behind which operators can postpone or dodge rehabilitation. It is unfortunate that most of the coal strippers regard reclamation as a public agency responsibility. We believe that the operator should be forced by state or federal laws and terms of coal purchase contracts to revegetate and otherwise restore the lands. This could possibly raise the price of the coal but we feel it could be amply justified.

Mr. Chairman, the Sport Fishing Institute, for the reasons given above, feels that any of the proposed legislative measures that best will provide for the regulation of present and future surface and strip mining, and for the conservation, acquisition, and reclamation of surface and strip mine areas would be in