

In brief, the magnitude and severity of thermal effects problems from both nuclear- and fossil-fueled electric power plants depend on local environmental conditions. Proper site selection is becoming more important as the availability of adequate surface water supplies for condenser cooling becomes more critical. However, it should be noted that technology for solving potential thermal pollution problems is available. Auxiliary cooling systems (reservoirs, ponds, or cooling towers) can be a solution, but increased initial plant costs, in the range of 5-10%, may be required over a conventional river water cooling system. However, these costs may be offset by increased flexibility in site selection, which could result in lower costs for fuel, power transmission, and land, plus a lower heat rejection to the river.

EXTENT OF AEC POLLUTION RESEARCH PROGRAM

Extensive radioactive waste management and pollution related research and development have been carried out as an integral part of the Atomic Energy Commission's overall R&D program in order to assure an orderly growth and safe development of the nuclear energy industry. Approximately \$30 million was spent during FY 1967 and about \$31 million is budgeted for FY 1968 in the Commission's biology and medicine, reactor development, weapons, raw materials, production and isotopes development programs for this purpose.

Resources at AEC multiprogram laboratories are also being utilized in a number of pollution and environmental health studies being conducted in direct support of the objectives of other agencies. Now underway are two joint efforts with HEW's National Center for Air Pollution Control. One, conducted at AEC's Brookhaven National Laboratory on Long Island, is examining the economic and technical feasibility of using stable isotopes of sulfur to trace the migration and chemical reactions of oxides of sulfur emitted with stack effluents. The other is a joint program involving AEC's Argonne National Laboratory near Chicago, with the Department of Air Pollution Control of the city of Chicago and the National Center for Air Pollution Control. The objective of this tripartite effort is to develop an air dispersion model which will aid in the establishment of pollution control measures for the Chicago Metropolitan area.

At Brookhaven National Laboratory a study of the oxidation, by radiation, of iron in acid mine drainage has been conducted in order to assess the potential of this method in relation to other mine drainage treatment methods being developed by the Department of the Interior and the Department of Mines and Mineral Industry of the State of Pennsylvania.

During the past year Commission staff and representatives of the Departments of Commerce, Interior and HEW have discussed how resources available at AEC's multiprogram laboratories might be applied to pressing pollution control and abatement problems. The aforementioned programs and a number of proposed programs now being discussed have, in large part, resulted from this series of interagency meetings. The Commission is continuing its efforts along this line and is hopeful that other areas can be identified in which the experience and facilities available at its multiprogram laboratories can be used to make substantial contributions to solving pollution and environmental health problems.

Very recently, last year, Sec. 33 of the Atomic Energy Act was amended to authorize AEC to assist others on health or safety research and development problems unconnected with AEC's nuclear missions. This added authority will serve to provide AEC with more flexibility in utilizing its laboratories, facilities and talent to help others solve important national problems such as environmental pollution.

SUMMARY AND CONCLUSIONS

In summary, AEC strongly supports the efforts which are directed toward restoring and/or maintaining the quality of our environment—a goal which has become an important national objective. The Commission's program of radioactive waste control is consistent with this objective. Independent evaluations of the program that have been made over the years by various technical committees in the National Academy of Sciences, and an advisory group to the President's Federal Council for Science and Technology have shown that radioactive waste management operations are being carried out in a safe and economical manner, without effect on the public and its environment. Also, the Joint Committee on Atomic Energy maintains a continuing review and surveillance over the Commission's waste management program to assure that development of the nuclear energy industry can be carried out with full protection of the public health and safety. Waste processing technology and environmental science have been,