

PUBLIC HEALTH

States Can End Pollution

► **WATER POLLUTION** problems that plague the entire nation can be solved by following the example of mutual cooperation between the eight states of the Ohio River Valley that has nearly ended sewage contamination problems and made a big dent in other types of pollution.

Living conditions for 86 of every 100 persons living along the Ohio River have been, or soon will be, improved by scientific controls that could be adapted to any area where a willingness to cooperate exists.

The Ohio River Valley Water Sanitation Commission points out in its annual report that nine years ago when the eight states pledged cooperation in a compact approved by Congress, less than one of each 100 persons in the area was served by sewage purification facilities.

Final plans for treatment works to serve another 1,100,000 population have been approved.

Having nearly eliminated sewage pollution problems, the Commission is now putting its attack on industrial contamination into high gear.

There are 1,431 industrial plants, some of them the largest of their type in the world, discharging waste into the Ohio River and streams feeding it. However, the report states, some progress already has been made. The number of plants now complying with the Commission's minimum pollution con-

trol requirements has jumped from 323 to 719 in the past four years. Several thousand smaller industries have been connected to municipal sewer systems so their wastes are treated before being poured into the river.

Among the plans for insuring better safeguards of water resources are: radioactivity monitoring stations; taste and odor investigations; a survey of coal mine operating procedures; development of control measures along the Monongahela River, which joins the Allegheny River at Pittsburgh to form the Ohio.

Beautification and recreational facilities have been a by-product of industrial water pollution control. Exposed coal in worked-out strip mining pits have been covered and shallow ends of the pits have been dammed. The procedure prevents formation of contaminating acids by coal exposed to the air. The resulting lakes provide fishing and swimming for nearby residents.

Commission members are appointed by governors of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia. The states banded together voluntarily and are bound only by a pledge of "faithful cooperation."

The report is available from the Ohio River Valley Water Sanitation Commission, 414 Walnut St., Cincinnati 2, Ohio.

Science News Letter, January 4, 1958

METEOROLOGY

1958 Storms Named

► **THE WEATHER** Bureau has revealed the names to be given any hurricanes appearing during 1958 in the Atlantic or Gulf of Mexico.

The first tropical storm will be named Alma. Succeeding ones will be named, in order, Becky, Cleo, Daisy, Ella, Fifi, Gerda, Helene, Ilsa, Janice, Katy, Lila, Milly, Nola, Orchid, Portia, Queeny, Rena, Sherry, Thora, Udele, Virgy, Wilna, Xrae, Yurith and Zorna.

Finding appropriate names for hurricanes is a problem for Weather Bureau officials and they welcome suggestions from the public. To be eligible for the list, however, the names must be legitimate ones.

In addition, the names must have two syllables, no more than six letters, and be easy to pronounce. Easy pronunciation is essential because of the hundreds of thousands of times the name is used in telling the public of the storm's movements.

The names must be ones not previously used for the Atlantic, since an entirely new list is issued each year. They must also not be among the 84 permanent names, on four lists of 21 each, that are used in rotation for identifying typhoons in the Pacific.

The obviously difficult letters of the alphabet to match with appropriate names are Q, U, X, Y and Z. These are the five omitted from the permanent Pacific lists.

Foreseeing the possibility of running out of names, the Weather Bureau is considering allowing a name to become eligible for the list after three or five years if it has never been used to identify a hurricane.

Names for such famous hurricanes as Audrey, Hazel, Carol, are sure not to be repeated within ten years, perhaps never.

Even after a suitable name is found for each letter of the alphabet, there is the problem of making sure that the "ah" and "ee" sounds do not come together.

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PUBLIC SAFETY

"Fossil Water" Lakes For Radioactive Waste

► **CURIOUS** American lakes possessing a built-in bottom layer of "fossil water" were suggested as suitable places to dump radioactive waste.

The suggestion that these lakes, called meromictic lakes, may be suitable depositories for some types of radioactive wastes was made to an American Association for the Advancement of Science meeting in Indianapolis, Ind., by Dr. Curtis L. Newcombe of the U. S. Naval Radiological Defense Laboratory, San Francisco, Calif.

Meromictic lakes do not have a complete

surface to bottom circulation. This results in an isolated, sealed-off bottom layer (the monimolimnion layer) that possesses marked stability and permanence. Because of these properties, the bottom layers of water may be regarded as "fossil waters."

A critical need exists for harmless places in which to dispose of radioactive waste, Dr. Newcombe, who is the Laboratory's principal investigator, said. The problem is becoming more and more acute because of the increased construction of nuclear reactor power stations. By 1980, it is conceivable that the U. S. nuclear power capability would result in fission products having a heat power level equal to about twice the quantity of all the radioactivity in the oceans of the world.

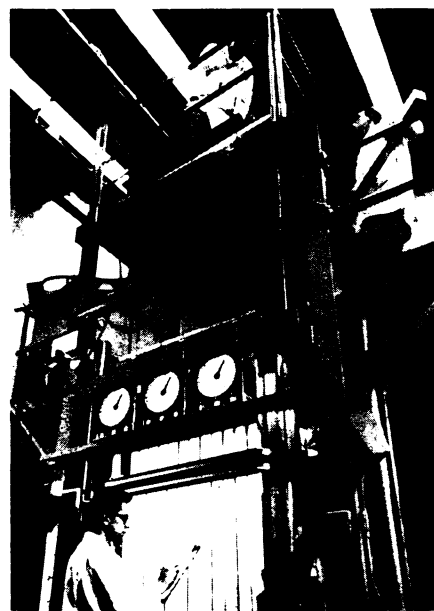
High level liquid wastes (two roentgens per hour or more), Dr. Newcombe explained, present the most serious problem. Presently they are stored in man-made enclosures underground pending some other safe place to get rid of them.

This is where the "fossil water" lakes may contribute significantly to the radioactive waste problem.

More study is needed, Dr. Newcombe emphasized, and one question in particular that needs answering is to what degree the heat from radioactive wastes deposited on these stagnant lake bottoms will change the bottom layer's stability.

Studies conducted by Dr. Newcombe in Sodon Lake in Michigan, a small, meromictic lake where the bottom layer is 18% of the total volume of water, showed it would take approximately a million curies during one year to raise the water temperature 35.6 degrees Fahrenheit, assuming no heat loss.

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REACTOR MOCK-UP—The reactor core mock-up, called Plastic Mock-Up Assembly, for the world's first atomic-powered destroyer is readied for tests by General Electric Company scientists at the Knolls Atomic Power Laboratory.