

OCEANOGRAPHY

Study Radioactive Wastes

No radioactivity has been found in a waste dumping ground off the coast of Massachusetts. Water, marine life and sediment from this area are currently being analyzed.

THE ATOMIC ENERGY Commission may have been grossly conservative in its rules for dumping radioactive wastes into the ocean.

Special on-the-spot studies conducted for AEC by the U. S. Coast and Geodetic Survey show no radioactivity in a dumping ground two miles in diameter and lying 20 miles offshore from Boston.

Dr. Harris B. Stewart, a Survey oceanographer now back from studies made aboard the Survey ship Hydrographer, said scoops of ocean sediment, as well as water from the vicinity, showed no trace of radioactivity detectable with a Geiger counter.

"In fact," he said, "the hottest thing we had aboard was my wrist watch."

In specifying its disposal practices, the AEC considered the possibility that all drums of the waste might break open the instant they hit water, releasing their contents. However until now, AEC did not know exactly how strong the drums were.

Further disposal studies showed that the 55-gallon oil drum containers, used to package radioactive wastes, were very rugged. They failed to break even when dropped on a craggy ocean floor.

In experiments from the Survey ship Gilbert, drums, used to simulate a "hot package," were filled with concrete and a brilliant yellow dye. They were dumped overboard near the mouth of Buzzards Bay. Skin divers watched from below as the 1,200-pound drums hurtled through 90 feet of water to land on rocks. The drums struck at a speed of 20 miles an hour, but failed to rupture.

At 15 sites along the Atlantic and Gulf coast, ships have dumped radioactive wastes. Only four have been used routinely, however, as dumps. The dumped material generally represents wastes from industrial firms licensed by the AEC to use radioactive isotopes. The wastes consist of such things as broken laboratory beakers and rags.

All water, marine life and sediment samples gathered by the Survey expedition are to be analyzed by the U. S. Public Health Service.

Among other things, regulatory authorities hope to find some marine organism that has the ability to concentrate radioactivity in its body. The finding of such an organism would simplify the chore of keeping an eye on the graveyards for atoms that have not yet died.

Atomic Ship Wastes

PROCEDURES FOR DISPOSAL of radioactive wastes from nuclear-powered ships that would permit safe operation of an international fleet of 300 atomic vessels by 1975

were proposed by a special committee of the National Academy of Sciences-National Research Council in Washington.

In evaluating the problems of waste disposal, the NAS-NRC's Committee on the Effects of Atomic Radiation on Oceanography and Fisheries relied heavily on predictions concerning the nature and quantity of potential wastes from the N. S. Savannah, the world's first atomic-driven merchant ship which was launched this month. It also considered the experience of the nation's fleet of atomic submarines.

For the purpose of establishing universally applicable operating criteria, the Committee specified three categories of radioactive wastes.

The first group, low-level liquid wastes, has its main source in the expanding volume of primary coolant in the heat exchange system during reactor warm-up.

The second group, packaged solid wastes, consists of expendable laboratory apparatus specially encased before discharge. This does not include spent fuel elements, which are removed under suitable precautions during refueling.

The last category consists of spent ion-exchange resins placed in the coolant system

to filter out radioactive impurities that develop in the primary coolant.

In a list of 11 recommendations regarding the design and operation of the ships, the Committee outlined procedures for dumping all three categories of wastes at safe distances from harbors, estuaries, coastal waters or commercial fishing areas.

The Committee also called for the preparation of a chart of the world's commercial fishing areas by the Bureau of Commercial Fisheries, to be used by officers of all atomic ships.

Science News Letter, July 25, 1959

MEDICINE

Doctor Starts Heart By Blow to Chest

A HEAVY BLOW on the side of the chest may start a heart that has stopped beating.

Dr. John T. Brandenburg of Medford, Ore., describes how a 64-year-old man was brought into the hospital with a severe chest pain that had begun suddenly when he was playing golf. Shortly afterwards, the patient announced that he was "passing out."

Dr. Brandenburg, who reports the incident in the *Journal of the American Medical Association* (July 11) could detect no pulse, heart tone or respiration in the patient.

He then struck three quick, heavy blows on the left side of the patient's chest. Just after the third blow a strong but irregular pulse was noticed. The pulse became regular after 40 minutes.

Science News Letter, July 25, 1959



CONFERENCE AT SEA—Skin divers, one of whom is shown conferring with a ship's officer on board the Coast and Geodetic Survey ship, the Gilbert, observed as 1,200-pound drums were dropped to land on rocks in 90 feet of water. The drums simulated radioactive wastes. Although they struck at speeds of 20 miles an hour they failed to rupture.