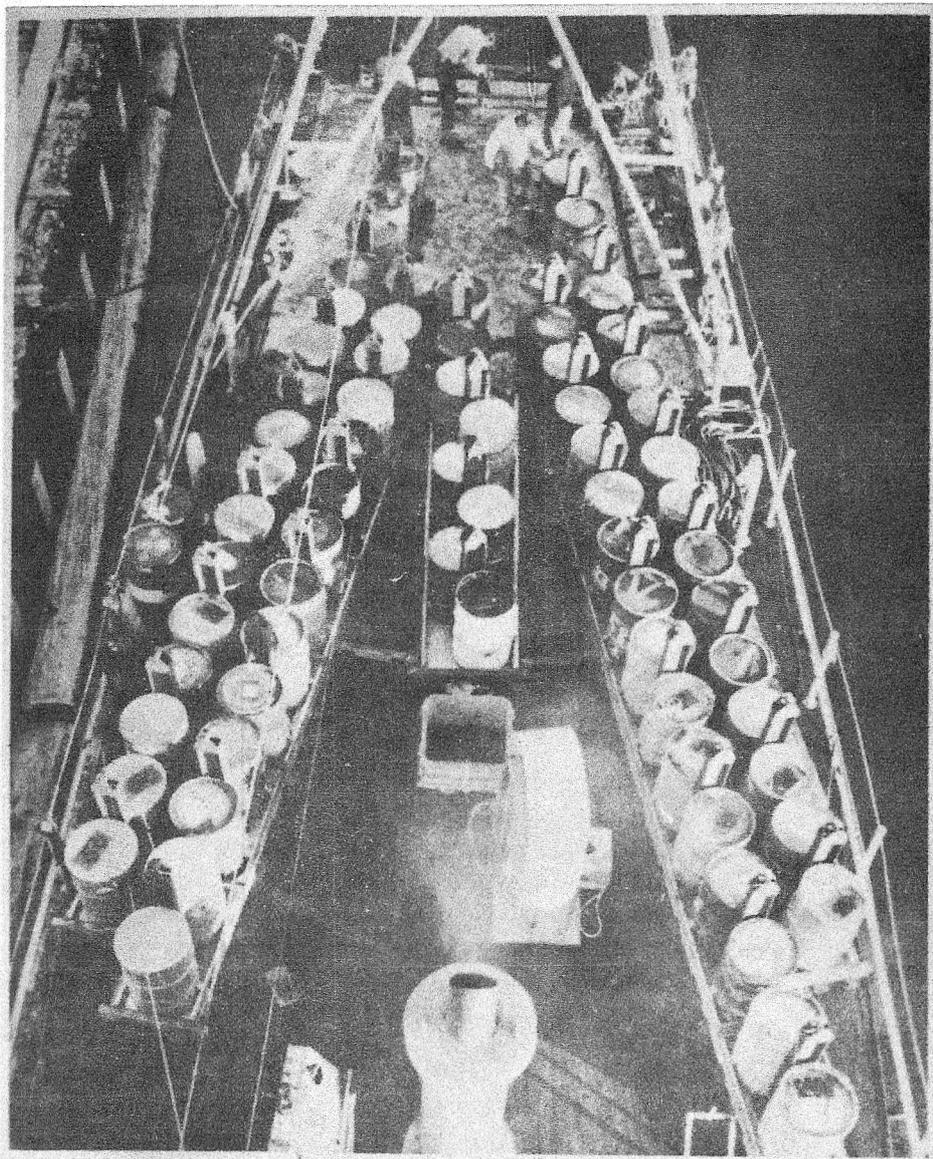


EVALUATION OF OCEANIC RADIOACTIVE
DUMPING PROGRAMS



Frontispiece: Barrels of radioactive waste about to be dumped into the ocean by the U.S. Atomic Energy Commission, 1960. From ref. 10.

SUMMARY

The purpose of this paper is to review programs of ocean dumping of radioactive wastes from scientific, medical and legal perspectives. The paper is structured around eight conclusions, each of which is documented in detail. The conclusions are: 1) scientific studies of oceanic radioactive dumpsites have furnished evidence of radioactive leakage into the marine environment; 2) the environmental and health effects of existing and proposed oceanic radioactive dumping operations have been estimated on the basis of incorrect models, limited models for which authoritative data are not yet available, and untested safety factors; 3) scientific studies of oceanic radioactive dumpsites have furnished evidence that radioactivity from the dumpsites has entered into the oceanic food chain and is present in edible fish; 4) current international standards for radiation risk factors have not been revised since the 1950's but are once again under review in light of recent scientific data suggesting that the risk of cancer and other adverse health effects is greater than previously reported; 5) the importance of dumpsite monitoring has been acknowledged but empirical data needed to fully assess the environmental and health impacts of ocean dumping programs are still not available; 6) the importance of compiling a full register of radionuclides deposited into the oceans by human activity is acknowledged but no such complete register has been compiled; 7) land based storage of radioactive wastes does not suffer the disadvantages of irretrievability in the event of miscalculation; 8) the legal status of dumping radioactive wastes into international water is unclear.

Comparative analysis of radioactive waste management options suggests that ocean dumping is the least attractive on five grounds. First, the oceans

are a living, interconnected environment that can return radioactive wastes to humans via the ocean food chain. Second, the ocean is a formidable environment, destructive of human structures such as radioactive waste containers. Third, despite recent rapid strides in the oceanographic sciences, The ocean is still largely an unknown environment. Fourth, the oceans represent a global resource, the birthright of all people and all generations. Fifth, damage of this global commons by a minority of people is contrary to principles of international law.

On these grounds it is suggested that the oceans are an unacceptable repository for radioactive wastes.