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Division of Information Services

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EFFECT OF RADIOACTIVE FALLOUT ON FISH

SYMBOL: BME:HCB

Yesterday you telephoned me to advise that a Washington correspondent for a Japanese newspaper had inquired as to the effect of radioactive fallout on tuna. As you know, effort has been made to confiscate the tuna which were aboard the Japanese fishing vessel which was purportedly exposed to heavy amounts of fallout. Therefore, this response is directed to the broader problem of the effect of radioactive fallout on tuna yet to be caught.

The Division of Biology and Medicine for several years now has supported studies on uptake of radioactive material by fish and their sources of food. We are now carrying on studies at various laboratory locations totaling about $225,000. In connection with each Pacific test series, specific studies on this subject have been sponsored by the Division of Biology and Medicine. This is a continuing program. The different organs and tissues from the bodies of over 50 different kinds of fish and other marine organisms, common to the sea near the Pacific Proving Grounds, were carefully analyzed for radioactivity.

In addition to the above, we recently established the Eniwetok Marine Biological Laboratory which, among other objectives, will be utilized for the purpose of studying the uptake of radioactive material by fish and also to study the entire marine biological food chain. This background is mentioned for the purpose of demonstrating that the AEC has anticipated questions of the kind which has been posed to you.

The various research projects supported by the Division and specifically the studies conducted at and near the Pacific Proving Grounds indicate, that even fish living in close proximity to the detonation sites absorb relatively small amounts of radioactive substances. Further, of the amount taken into the body only a small percentage of the radioactive substances were actually absorbed into the tissues of the fish. Fish collected several miles away from the test site either in the lagoon or the sea showed little or no evidence of activity.

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It is evident that the strong prevailing surface winds and water current dissipated possible concentrations of bomb debris with such rapidity and to such an extent that it would be extremely difficult for deep water fish to sustain deleterious effects from fallout. Likewise, the rate of decay of much of the fallout substances are so rapid, and hence the level of activity declines so rapidly, that it is doubtful that fish would be affected adversely.

While you may not wish to use the following information, we feel that certain other facts should be known to you. AEC-supported studies have not specifically included tuna, but there are studies being carried on at laboratories where AEC does have an interest. This is particularly true at the University of Hawaii Marine Laboratory where an AEC investigator also is doing research on tuna with support from ONR. We do, however, propose to include tuna in our future studies. At the moment, we have no reason to think the statements made above would not also apply to tuna, viz; that radioactive fallout would have no direct adverse effect on tuna.

Another facet of the problem of which you should be aware is the indirect effect of fallout on edible fish by virtue of possible damage to the marine biological food chain. It is known, for example, that algae carry radioactive material externally. These in turn are eaten by small surface feeding fish, the principal food source of tuna. Although we are working on the problem currently, we do not have conclusive evidence that test activities do not have an adverse effect upon the food chain supply of commercially desirable fish such as tuna. Our opinion, however, based on findings in connection with food fish other than tuna, is that no deleterious effect occurs.

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