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U.S. Forced to Restudy Radiation Peril

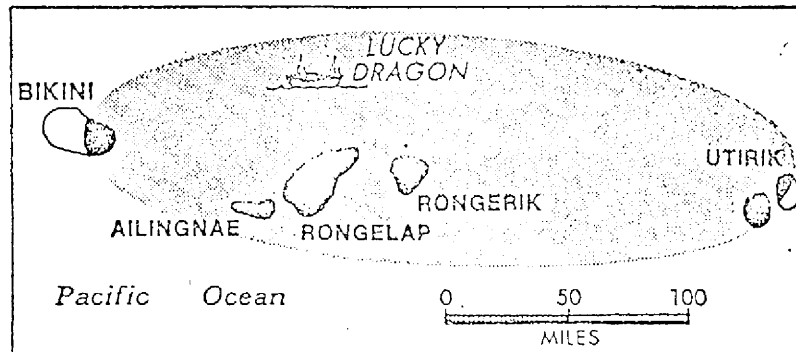
BY LARRY PRYOR
Times Staff Writer

The residents of an island in Micronesia that received what was considered a small amount of radiation after an H-bomb test in 1954 have developed a high rate of thyroid disease and cancer.

The sudden increase, which did not become evident until about 22 years after the exposure to fallout, is forcing health physicists in the federal government to revise theories on dose rates that lead to adverse human effects.

Their failure to predict or explain the cause of the disease has also generated fear and mistrust among people on the island, Utirik Atoll, according to recent reports from the Marshall Islands. The islands are part of the U.S. Trust Territory of the Pacific.

One scheduled quarterly medical survey of the Utirik islanders was canceled last December and the American resident physician in Micronesia is being recalled, The Times has learned.



RADIOACTIVE CLOUD—After H-bomb test on Bikini, much attention was paid to the islands in center but little to Utirik.

Times map

"The people of Utirik are very distressed and angry as a result of the radiation," the chiefs of the atoll wrote the U.S. Energy Research and Development Administration (ERDA), which administers the medical program in the islands related to radiation disease. "The people feel that the ERDA program is in need of vast changes."

ERDA and its predecessor, the Atomic Energy Commission, had examined the 158 Utirik residents who were exposed to fallout on March 1, 1954, and later treated 11 officially reported cases of thyroid tumors, three of them malignant.

But until the recent development of the thyroid problem, the residents

Please Turn to Page 26, Col. 1

Continued from First Page
were told the dose of radiation they received was too low to cause harmful effects.

"Thyroid nodules have been increasing in the Utirik people and this was quite unpredicted and we had some of the best experts in the United States," said Dr. Robert A. Conard, who has headed the ERDA and AEC medical program in the Marshall Islands for 23 years.

"It turns out we were wrong," Conard said in an interview, "but we did it in all sincerity and I'm afraid the people have held that against me somewhat."

Glenn Alcalay, a Peace Corps volunteer who lived on Utirik two years and returned to California this summer, said the increase in disease "has been an amazing psychological trauma to these people."

One recently reported case of thyroid cancer involved the young son of an exposed person, and that

"Let's face it, the U.S. goofed," said official of research division.

has raised the possibility of either second-generation genetic effects or health problems from latent radiation.

The ERDA health program, which was carried out under contract with the Brookhaven National Laboratory in Upton, N.Y., did not include examinations of children of exposed persons and did not encompass genetic effects.

"The theory was put forth that

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LOS ANGELES/CALIF/TIMES/6-11-77

Utirik received low radiation so a detailed follow up was not necessary," said Dr. Konrad P. Kotrady, a former Brookhaven resident physician in the Marshalls who developed a close relationship with the island people before returning to his teaching position at the University of Utah.

"Now the facts of the thyroid cancer at Utirik have strongly shown that the theory was wrong," Kotrady wrote in a stinging critique of the Utirik medical program.

"The people ask if this thyroid problem has suddenly occurred, is it not possible that the experts have been wrong for so many years and that more problems will occur in the future?" Kotrady said.

A study by a special committee of the Micronesian Legislature found widespread anxiety and misunderstanding among the Marshallese about the threat from radiation, not only at Rongelap and Utirik, but also among residents of Bikini, the site of the tests, which is gradually being repopulated.

"Time and again the committee found that the people did not understand anything about their exposure, the amount of exposure, the possible effects on themselves and their children and on their environment," the committee report said.

The various studies done on the problem show a monumental culture clash between the health specialists from the United States and the islanders, whose food-gathering habits and way of life have changed little over the centuries.

As the confusion has grown, so, too,

have expressions of resentment and hostility, including a suit by the residents of Bikini to force the U.S. government to conduct a thorough monitoring of radiation.

The atolls affected by the Bikini test program string eastward from Bikini. Rongelap is about 100 miles from the test site and Utirik is 280 miles.

Until recently, the focus of the medical program had been mainly on the island of Rongelap, whose 68 residents received substantially higher levels of radiation from fallout so thick that it resembled snow.

ERDA officials said the program has recently been revised and more effort is being made to meet the needs of the Utirik people. "Let's face it, the U.S. goofed," said Dr. Bill Burr, deputy director of ERDA's Division of Biomedical and Environmental Research.

The islander's deep dissatisfaction will be aimed at Congress next week when the Senate Committee on Energy and Natural Resources takes testimony on a bill to compensate the inhabitants of Rongelap and Utirik.

Because of a recent U.S. Supreme Court ruling involving a damage claim on the island of Kwajalein, Micronesians cannot sue for damages in federal court, although Micronesia is a Trust Territory of the United States and its citizens share many of this country's constitutional safeguards.

In effect, their only recourse is to appeal to Congress and the Department of Interior, which administers the Trust Territories.

The islands are of key strategic importance to the United States and are the site of important missile and naval installations.

Two bills before the U.S. Congress, both of which were adapted from a proposal by Secretary of Interior Cecil D. Andrus, would compensate each Micronesian who developed thyroid disease or a "radiation-related malignancy" with \$25,000.

It would provide \$25,000 to the heirs of persons dying of radiation-related causes and an additional \$1,000 to each resident of Utirik at the time the fallout accident occurred.

The issue of compensation is difficult because of a lack of precedent. "In contrast to other groups exposed to radiation, the Marshallese are unique in that they comprise the only human population ever exposed to acute radiation from fallout," Dr. Conrad said in a 20-year report on the Brookhaven program.

In 1965, Congress voted to compensate the Rongelapese \$10,500 each, but radiation-related thyroid disease had only begun to break out on that island and the full health effects were not known.

Since then, a 19-year-old boy who was a 1-year-old at the time of the bomb test has died of leukemia, which Brookhaven specialists said was almost certainly radiation-related. A case of fatal stomach cancer also has been reported, in addition to an increase in thyroid cases.

Japan was paid \$2 million by the U.S. government in 1955 to compensate for the damages to 29 Japanese fishermen on the Lucky Dragon fishing vessel who were subject to fallout from the same bomb test, as well as to

pay for the loss of fish due to radiation.

So far, the Utirikese have received \$18,000, or \$114 per person, to pay for

A series of mistakes compounded the islanders' radiation exposure.

the inconvenience of medical examinations. This figure was arrived at before the thyroid disease problems became apparent.

Ronald G. Bakal, a Los Angeles attorney representing 70 Utirik people, referred to the previous payment and the amounts proposed in the bills as "gratuitous compensation."

"In California, the minimum would be \$100,000 to compensate if a person were involved in a wrongful death and it could go as high as \$400,000 to \$500,000, maybe more, depending on loss of income and other factors," Bakal said.

He has demanded that the 40 persons in the exposed group still living on the atoll receive \$1 million each and that the atoll as a whole be compensated \$60 million "for psychological, emotional and environmental damages."

Bakal said community funds should be provided to cover environmental studies and assistance, as well as hospitals, a pharmacy and medical training for the islanders.

He also has questioned the quality of the medical treatment provided the Marshallese, saying "it can only be described as experimentation."

These charges are bitterly denied

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LOS ANGELES / CALIF / TIMES / 6-11-77

by ERDA officials, who argue that despite the unpredicted long-term health effects, the medical program was the best that could be provided, considering budget limitations and the isolation of the islands.

"The treatment we have given these people is so far above what is given on the other outer islands of Micronesia, I feel proud of what we have done for them," Conard said. "I have a great deal of love and respect for these people."

The people of Utrik became skeptical of the medical program when disease broke out after Conard and a number of other Brookhaven specialists told them they had nothing to worry about. "The people of Utrik should be able to choose their own doctor," the chiefs and the people wrote to ERDA.

However the compensation question is resolved, there has been no dispute that the United States was at fault and that a series of mistakes by AEC and military personnel after the test compounded the islanders' radiation exposure.

During the predawn hours on March 1, 1954, a fleet of ships, Joint Task Force 7, was positioned 30 miles east of Bikini and 70 miles west of Reongelap.

Despite what was apparently incomplete and conflicting weather data, the decision was made to detonate a hydrogen bomb, "Bravo," on a tower on Bikini at 6:45 a.m.

"The yield was about 17 megatons,

considerably greater than expected, and an unpredicted shift in winds in the upper atmosphere caused the radioactive cloud to drift over and deposit fallout on several inhabited atolls to the east," Brookhaven's 20-year review of the incident reported.

The report of the Micronesian Legislature said fireballs from the device shot upward at a rate of about 300 miles per hour, rising in one minute to five miles. It was the biggest blast yet attempted, carrying millions of tons of Bikini reef into the air.

"Bravo's" fission-fusion-fission process also released an enormous quantity of gamma and beta radiation, which then began to fall downwind in a cloud of white, gritty ash.

The fallout landed on the fleet of ships and the Lucky Dragon, which had strayed into the area in search of fish. Within four to six hours, the fallout began to rain on Rongelap, where there were 64 people, and nearby Ailingnae with another 18.

It also deposited lesser amounts on Rongerik, where 28 servicemen had taken up station with monitoring equipment. The men took cover in a metal hut, the Micronesian report said.

The cloud eventually reached Utrik.
Please Turn to Page 27, Col. 1

Continued from 26th Page

ik, about 22 hours later, but in contrast to the heavy, snow-like fallout at Rongelap, the fallout at Utrik was described as "mistlike." There were 157 persons on the atoll at that time.

The servicemen were evacuated from Rongerik within 36 hours, but it took two to three days to completely evacuate the Micronesians from the other islands, according to the committee report.

The exposed people were taken by planes and Navy ships to Kwajalein for decontamination and medical evaluation. The people from Rongelap had skin burns, gastrointestinal disturbances, hair loss and blood changes.

The AEC later estimated that the Rongelapese had received 175 rads of gamma radiation and the Utrikese 14 rads. The Utrik residents showed no signs of radiation injury.

(A rad is a measure of absorbed dosage. According to one ERDA official, at 14 rads there would be no immediate observable effects, but at 175 rads some biological changes could be measured, such as a change in blood count.)

(The lethal threshold is considered to be about 400 rads, a point at which about half of the people exposed would probably die in 30 days.)

The island residents were not aware of the danger from the fallout before being evacuated, so they absorbed radiation internally by inhaling the fallout and ingesting contaminated food and water.

Children, in particular, were found to have received high dosages. The principal isotope at the early stage of the fallout was iodine 131, which accumulated in the islanders' thyroid glands.

Again, children were affected the most, some receiving thyroid doses of 700 to 1,400 rads, compared with 220 to 450 for the adults, according to government reports.

The Utrik people were returned to their atoll in June of that year, but it took three years before the people of Rongelap could return.

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