Paper

A HISTORY OF THE PEOPLE OF BIKINI FOLLOWING NUCLEAR WEAPONS TESTING IN THE MARSHALL ISLANDS: WITH RECOLLECTIONS AND VIEWS OF ELDERS OF BIKINI ATOLL

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Abstract—**The people of Bikini Atoll were moved from their homeland in 1946 to make way for the testing of 23 nuclear weapons by the United States government, beginning with the world's fourth atomic detonation. The subsequent half-century exodus of the Bikini people included a 2-y stay on Rongerik Atoll, where near starvation resulted, and a 6-mo sojourn on Kwajalein Atoll, where they lived in tents beside a runway used by the U.S. military. In 1948, they were finally relocated to Kili, a small, isolated, 200-acre island owned by the U.S. Trust Territory government. Numerous hardships have been faced there, not the least of which was the loss of skills required for self-sustenance. Located 425 miles south of Bikini, Kili Island is without a sheltered lagoon. Thus for six months of the year, fishing and sailing become futile endeavors. Because of the residual radioactive contamination from the nuclear testing, the majority of the Bikinian population still resides on Kili today. One attempt was made to resettle Bikini in the late 1960's when President Lyndon B. Johnson, on recommendations from the Atomic Energy Commission, declared Bikini Atoll safe for habitation. In 1978, however, it was discovered by the U.S. Department of Energy that in the span of only one year, some of the returned islanders were showing a 75% increase in their body burdens of ^{137}Cs. In 1978, the people residing on Bikini were moved again, this time to a small island in Majuro Atoll. In the early 1980's, the Bikinians filed a class action lawsuit against the U.S. government for damages arising out of the nuclear testing program. Although the claim was dismissed, eventually a $90 million trust fund was established for their local government. Since then the leaders of the people of Bikini residing on Kili Island and Majuro Atoll have been confronted with the immense responsibility of determining how to clean their atoll while at the same time maintaining the health and welfare of their displaced population. For the community and their leaders, grappling with these technical decisions has created a life of strife, debate and conflict—and an uncertain future. Now, a radiological cleanup of Bikini is expected to begin sometime within 1997. The objective of this paper, with the support of the views and the recollections of elder Bikinians, is to recount the history and discuss issues facing the first displaced people of the nuclear age.**

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INTRODUCTION

BIKINI IS 1 atoll among the 29 atolls and 5 islands that compose the Marshall Islands. These atolls of the Marshalls are scattered over 357,000 square miles of a lonely part of the world located north of the equator in the Pacific Ocean. They help define a geographic area referred to as Micronesia.

Once the Marshalls were discovered by the outside world, first by the Spanish in the 1600's and then later by the Germans, they were used primarily as a source for producing copra oil from coconuts. The Bikini islanders maintained no substantial contacts with these early visitors because of Bikini Atoll's remote location in the very dry, northern Marshalls. The fertile atolls in the southern Marshalls were attractive to the traders because they could produce a much larger quantity of copra. This isolation created for the Bikinians a well integrated society bound together by close extended family association and tradition, where the amount of land they owned was a measure of their wealth.

In the early 1900's, the Japanese began to administer the Marshall Islands, and this domination later resulted in a military build up in anticipation of World War II. Bikini and the rest of these peaceful, low lying coral atolls in the Marshalls suddenly became strategic. The islanders' life of harmony drew to an abrupt close as the Japanese prepared for the American invasion of Bikini. The Japanese built and maintained a watchtower on Bikini Island. Throughout the conflict the Bikini station served as an outpost for the Japanese military headquarters in the Marshall Islands, Kwajalein Atoll.

After the war, in December of 1945, President Harry S. Truman issued a directive to Army and Navy officials that joint testing of nuclear weapons would be necessary "to determine the effect of atomic bombs on American warships." Bikini, because of its location away from regular air and sea routes, was chosen to be the new nuclear proving ground for the United States government.

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In February of 1946, Commodore Ben H. Wyatt, the military governor of the Marshalls, traveled to Bikini and, on a Sunday after church, assembled the Bikinians to ask if they would be willing to leave their atoll temporarily so that the United States could begin testing atomic bombs for "the good of mankind and to end all world wars." King Juda, then the leader of the Bikinian people, stood up after much confused and sorrowful deliberation among his people, and announced, "If the United States government and the scientists of the world want to use our island and atoll for furthering development, which with God's blessing will result in kindness and benefit to all mankind, my people will be pleased to go elsewhere" (Mason 1954).

While the 167 Bikinians were preparing for their exodus, preparations for the U.S. nuclear testing program advanced rapidly. Some 242 naval ships, 156 aircraft, 25,000 radiation recording devices and the Navy's 5,400 experimental rats, goats, and pigs began to arrive for the tests. Over 42,000 U.S. military and civilian personnel were involved in the testing program at Bikini (Shurcliff 1947).

The nuclear legacy of the Bikinians began in March of 1946, when they were first removed from their islands for the preparations of Operation Crossroads. The history of the Bikini people from that day has been a story of the struggle to understand scientific concepts outside of their realm as well as to deal with day-to-day problems of finding food, raising families, and maintaining their culture amidst the progression of events set in motion by the Cold War that were, for the most part, out of their control. The objective of this paper, with the inclusion of the recollections of elder Bikinians, is to recount the history and discuss issues facing the first displaced people of the nuclear age.

MOVEMENT OF THE BIKINI PEOPLE

In preparation for Operation Crossroads, the Bikinians were sent 125 miles eastward across the ocean on a U.S. Navy LST landing craft to Rongerik Atoll. Rongerik Atoll was uninhabited because traditionally the Marshallese people thought the islands were unlivable due to their size (Rongerik is 1/6 the size of Bikini Atoll) and due to an inadequate water and food supply. There was also a deep rooted traditional belief that the atoll was inhabited by evil spirits. The Administration left the Bikinians food stores sufficient only for several weeks. The islanders soon discovered that the coconut trees and other local food crops produced very few fruits when compared to the yield of the trees on Bikini. As the food supply on Rongerik quickly ran out, the Bikinians began to suffer from starvation and fish poisoning due to the lack of edible fish in the lagoon. Within 2 mo after their arrival they began to request that U.S. officials move them back to Bikini (Mason 1948).

Emso Leviticus, a young woman at the time of the exodus, recalls the transition from being under the Japanese rule to the American takeover, to their journey to Rongerik:[†]

> How our lives began to change... I remember when we women used to wear clothes made out of woven pandanus leaves with our tops sometimes going bare until one day the Japanese brought us dresses to wear. I eventually had about five dresses or so like most of the other girls and that seemed to be plenty for us to wear. All the girls loved the change of style, especially because the clothes felt comfortable to us, and so we were wearing dresses when the Americans finally arrived on our islands.
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> We were elated when we discovered that the Americans weren't going to hurt us, in fact, the Navy men were very kind and gave us big bins filled with all kinds of food that we had never seen or eaten before like C-rations, chocolates, corned beef and other wonderful things. They took some of us to the ship to get medical attention. One woman named Tamar was very sick, and when she returned, she was all better again. The Americans stayed awhile and I befriended one of the men. He often visited with me and built a cement water catchment for my house.
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> I can still recall the day when the more important looking Americans came to ask us to move from our islands. All of these new men were wearing beautiful uniforms. After church one day, they asked us to come together on Rosie's and Dretin's land called Loto, near Lokiar's land, to have a community meeting.
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> We were all there—men, women and children—and we tried to listen carefully to what they were asking our leaders. All of the women became surprised when we found out that they were requesting that we move to Rongerik Atoll or Ujae Atoll. I remember that our leaders answered: If we have to leave, we would rather go to Rongerik because we don't want to be under the leadership of another king or *iroij* on Ujae.
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> No one dissented in front of the Americans when they asked us if we would be willing to go to another island so they could test their bombs. We had had a meeting beforehand. It had been decided that we would all stand behind Juda when he gave our answer to the man with the stars on his hat and clothes.
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> We were a very close-knit group of people back then. We were like one big family. We loved each other accordingly. After we made the final decision, no one made any problems about it. We agreed to go along with whatever was decided by our leaders.
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> Eventually, they sent a group of our men ahead to begin getting Rongerik ready, and, in the meantime, we had a church service at the cemetery of our elders. We put flowers on their graves and cleaned up the area. I remember being very sad at that time because of the strange feeling of having to leave behind the bones of my ancestors while strangers would be walking around on our island.
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> We left our island after loading everything we owned including our canoes, various kinds of food, bibles, dishes, tools and even some pieces of our church and Council house. We loaded it all onto one of those big ships that open in the front [Navy landing craft], and then, after finding our places on the ship, we waved good-by to our islands and sailed to Rongerik.
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> Being a curious young girl, never having seen anything like this before, I had fun on the ship. We finally arrived at Rongerik Atoll, and after we unloaded all of our belongings

[†] Personal communication, Leviticus, E. 1990.

onto the beach, the Council immediately began to decide on which families would live in the various houses that had been prepared for us. We started dividing up the food that the Navy men had given us, and we tried to fall back into the daily routines of our lives.

Routine was difficult now though because there were many newsmen on Rongerik taking pictures of us. I guess it was all exciting in a way, but it was also a little scary. Those people who were looking at us were strange. The island itself looked so different from Bikini. It was smaller. And, from the beginning, we had reason to lack confidence in our abilities to provide for our future on that small place. We could only remain hopeful and keep thinking that one day soon we would be returned to Bikini.

In July, the Bikinian leader, Juda, traveled with a U.S. government delegation back to Bikini to view the results of the second atom bomb test of Operation Crossroads, code named Baker. Juda returned to Rongerik and told his people that the island was still intact, that the trees were still there, that Bikini looked the same (Mason 1954).

The two atomic bomb blasts of Crossroads were both about the size of the nuclear bomb dropped on Nagasaki, Japan. Eighteen tons of cinematography equipment and more than half of the world's supply of motion picture film was on hand to record the movement of the Bikinians from their atoll and also the opening minutes of each of the two explosions.

Later that year, from December of 1946 through January of 1947, the food shortages worsened on Rongerik and the Bikinians had to continue to struggle with near starvation. During the same period of time, the area of Micronesia was designated as a United Nations Strategic Trust Territory (TT) to be administered by the United States. Indeed, it was the only strategic trust ever created by the United Nations. The trusteeship agreement for the trust territory of the Pacific Islands, the U.S. committed itself to the United Nations directive to "promote the economic advancement and self-sufficiency of the inhabitants, and to this end shall. . . protect the inhabitants against the loss of their lands and resources. . . (Trusteeship agreement 1947)" The Bikini people have long seen the irony in the conduct of the TT agreement that allowed the bombing of their homeland and that forced them into starvation on Rongerik Atoll.

In May of 1947, to make the Bikinians' situation on Rongerik even more serious, a huge fire damaged many of the coconut trees, and by July, when a medical officer from the U.S. visited the island, the Bikinian people were found to be suffering severely from malnutrition. A team of U.S. investigators determined in the fall, after a visit to Rongerik, that the island had inadequate supplies of food and water and that the Bikini people should be moved from Rongerik without delay. The U.S. Navy was harshly criticized in the world press for neglecting the Bikini people on Rongerik. Harold Ickes, a reporter, stated in his 1947 syndicated column *Man to Man* that, "The natives are actually and literally starving to death" (Ickes 1947).

Immediate preparations began for the transfer of the Bikinians to Ujelang Atoll in the western Marshalls. In November, a handful of young Bikinian men went there, and with the help of Navy Seabees, they began to arrange a community area and to construct housing. At the end of the year, however, the U.S. selected Enewetak Atoll as a second nuclear weapons test site. The Navy then decided that it would be easier to move the Enewetak people to Ujelang despite the fact that the Bikinians had built all the housing and held high hopes that they would be moved there quickly.

In January of 1948, anthropologist Leonard Mason, from the University of Hawaii, traveled to Rongerik at the request of the Trust Territory High Commissioner to report on the status of the Bikinians living there. Horrified at the sight of the withering islanders, Mason immediately requested a medical officer along with food supplies to be flown in to Rongerik.

The torment and grief experienced during the two years that the Bikini people spent suffering on Rongerik Atoll has been best expressed by Lore Kessibuki, considered the poet laureate by the Bikinians. Rarely did the bitterness of his people's trials and tribulations show through his smile and the sweetness of his personality. However, whenever he was called upon by the media to do an occasional brief review of the Bikinians exodus, he always described the stay on Rongerik with an enormous amount of remorse and hatred. The situation on those islands was obviously a dreadful situation for the people. But it was felt deeper by Lore, for he was one of the leaders of a forgotten and starving community:[‡]

While on Rongerik there were of course many problems for us to deal with as leaders. But the crisis in particular that stands out in my mind, even today after the many years have gone by, is the illness that many of us came down with as starvation became prolonged and excruciatingly painful.

The first symptom was that we all suddenly had a very hard time sleeping. When we would finally manage to doze for a short time late at night, and afterwards, wake in the morning, we would find ourselves feeling weak and dizzy and shockingly unable to stand. We could see that the sun had already risen above the trees. This gave us the urge to start working for our families. I used to lay on my mat in the mornings just wondering what was wrong with me until finally I would manage to find the strength to get up and move around enough to get a drink of water. It was then that we would be confronted with the strangest of feelings. By simply touching the water our limbs would be shot with pain as if thousands of needles were running up and down our hands and legs. These sensations, coupled with the awkwardness of adjusting to our new found environment, left us feeling very perplexed.

I remember that sometimes I would have no feeling in my hands, and in addition to this personal dilemma, I had to watch helplessly as we all became so very thin and sick. We had no meat on our legs and arms, and our muscles were worn thin from the lack of activity.

In Rongerik you just shouldn't eat the fish. The fish have a history of being poisoned by the food that they ate from the reef—even though they were the exact same kind of fish that

[‡] Personal communication, Kessibuki, L. 1987, 1988, 1990, 1991.

we used to eat on Bikini. One reason we knew that the island was uninhabitable, even before we arrived there, was because our elders had taught us that Rongerik was inhabited by a demon named Litobora.

Even through all of these hardships it was unfathomable that we still held high hopes that the Americans would help us. . . Bikini is like a relative to us: like a father or a mother or a sister or a brother, perhaps most like a child conceived from our own flesh and blood. And then, to us, that child was gone. . . Buried and dead.

In the old days we lived and worked together in harmony and treated each other with a great amount of respect. That is how we respect the Americans now. But back then we would get upset with each other for believing in the Americans and in the promises that they made when they asked us to move. We would shout at each other that the promises weren't true because surely this wasn't "the best of their ability"—as they had promised—being shown towards us. After all, it was certainly clear that they had forgotten about us. Even as the problems began to mount, it was still extremely hard to let go of the belief that the Americans would someday come through.

In March of 1948, after two unpleasant years on Rongerik, the Bikinians were transported to Kwajalein Atoll and housed there in tents on a strip of grass beside the airport. The Bikinians fell into yet another debate among themselves about alternative locations soon after they settled on Kwajalein. Kilon Bauno, who while alive was the *iroij* of the Bikinians, and earlier in his life, during the time of exodus, a councilman, gives his firsthand account of life on Kwajalein and the decisions that had to be made by the islanders, which include their transition to Kili Island:[§]

We lived a strange life on Kwajalein. From day to day we were frightened by all the airplanes that continuously landed very close to our homes. We were also frustrated by the small amount of space in which we were permitted to move around. We had to depend on the U.S. military for everything. We were always asking them to help us in one way or another. We were afraid of this alien environment and almost from the day we got there we began thinking about other places to live.

We talked about moving to many places, like Wotho, Lae and Ujae Atolls. But we encountered the same types of problems with all of these islands. One major factor was that these islands already had people living on them and therefore we thought that we would have social conflicts with the inhabitants because they recognized the *iroij* of those atolls. We Bikinians did not. We were afraid that they wouldn't let us live by our own rules and so we began asking the Americans to find somewhere else for us. Then, Dr. Mason asked us about Kili Island. We debated among ourselves about where we should go. Finally it came to a vote. We chose Kili by a large majority over Wotho and Ujae as the sight of our third temporary home.

They sent some Navy men along with some of us Bikinians to help set up our community there. I remember that time well because we were so tired of all this moving around, building new communities and then having to adjust to new places—always adjusting, adjusting, adjusting. Now, once again, we had to start thinking of how to move all of our people to this next island. It was terrible. We were so weary and exhausted, not only by the labor we were going through to get these places ready, but also by these thoughts in our minds: What was happening to Bikini? How long would we be in this new place? Sometimes we wouldn't eat for an entire day because of the combination of hard work and all the worry that we were experiencing. We were always asking ourselves, What are we doing here? What are we going to eat when we get our people to this new place? How will our lives be there? Questions like this were a great burden for the leaders at that time.

So it was in June of 1948, that the Bikinians chose Kili Island in the southern Marshalls. This choice ultimately doomed the Bikinians' traditional diet and lifestyle, both based on fishing.

In September of 1948, two dozen Bikinian men were chosen from among themselves to accompany eight Seabees to Kili in order to begin the clearing of land and the construction of a housing area for the rest of the people who remained on Kwajalein.

In November of 1948, after 6 mo on Kwajalein Atoll, the 184 Bikinians set sail once again. This time the destination was Kili Island, their third community relocation in 2 y.

Starvation also troubled the Bikinians on Kili; this situation lead the Trust Territory administration to donate a 40-foot ship to be used for copra transportation between Kili and Jaluit. Later, in 1951, the boat was washed into the Kili reef by heavy surf and sunk while carrying a full-load of copra. In the following years rough seas and infrequent visits by the field trip ships caused food supplies to run critically low many times on the island and once even required an airdrop of emergency food rations.

Later, in January of 1955, the Trust Territory ships continued to have problems unloading food in the rough seas around Kili, and the people once again suffered from starvation. The following year the food shortage problems grew even worse. Consequently, the United States decided to give the Bikinians a satellite community located on public land on Jaluit Atoll, thirty miles to the north. Three families moved to Jaluit. During 1957, other families rotated to Jaluit to take over the responsibilities of producing copra for sale.

During this period the Bikinians signed an agreement with the U.S. government turning over full use rights to Bikini Atoll. According to the agreement, any future claims by the Bikinians based on the use of Bikini by the government of the United States, or on the moving of the Bikinian people from Bikini Atoll to Kili Island, would have to be made against the Bikinian leaders and not against the U.S government. In return for this agreement, the Bikinians were given full use rights to Kili and several islands in Jaluit Atoll which were Trust Territory public lands. In addition, the agreement included $25,000 in cash and an additional $300,000 trust fund which yielded a semi-annual interest payment of approximately $5,000 (about $15 per person a year). This agreement was made by the Bikinians without the benefit of legal representation (Juda et al. 1984).

[§] Personal communication, Bauno, K. 1988, 1990.

Typhoon Lola struck Kili late in 1957, causing extensive damage to crops and sinking the Bikinians' supply ship. Shortly afterwards in 1958, Typhoon Ophelia caused widespread destruction on Jaluit and all the other southern atolls. The Bikinians living on Jaluit moved back to Kili because the satellite community became uninhabitable due to the typhoon damage. The Bikinians continued to fight the problems associated with inadequate food supplies throughout 1960.

The difficulty in inhabiting Kili is due in part to the small amount of food which can be grown there, but more so because it has no lagoon. Kili differs substantially from Bikini because it is only a single island of one-third of a square mile in land area with no lagoon, compared to the Bikinians' homeland of 23 islands that forms a calm lagoon and that has a land area of 3.4 square miles. Most of the year Kili is surrounded by 10 to 20 foot waves, which deny the islanders of the opportunity to fish and sail their canoes. After a short time on Kili—an island that some of the older people believe was once an ancient burial ground for kings and therefore overwrought with spiritual influence—they began to refer to it as a "prison." Because the island does not produce enough local food for the Bikinians to eat, the importation of USDA canned goods, and also food bought with their supplemental income, has become an absolute necessity for their survival.

Meanwhile, back on Bikini, on 1 March 1954, as part of the Castle series, a 15 megaton hydrogen bomb code named Bravo was detonated in the northwest corner of the atoll. The explosion turned three islands into a fine gritty mist, heavily irradiated Bikini Atoll and most of the northern Marshalls—including the people still inhabiting those atolls—and left a hole in Bikini's reef 1 mile wide and 400 feet deep.

In 1967, U.S. government agencies began considering the possibility of returning the Bikinian people to their homelands based on data on radiation levels on Bikini Atoll from the U.S. scientific community. This scientific optimism stemmed directly from an AEC study (AEC 1969) that stated, "Well water could be used safely by the natives upon their return to Bikini. It appears that radioactivity in the drinking water may be ignored from a radiological safety standpoint... The exposures of radiation that would result from the repatriation of the Bikini people do not offer a significant threat to their health and safety." Accordingly, in June of 1968, President Lyndon B. Johnson publicly promised the 540 Bikinians living on Kili and other islands that they would now be able to return to their homeland. The President also stated that "It is our goal to assist the people of Bikini to build, on these once desolated islands, a new and model community." He then ordered Bikini to be resettled "with all possible dispatch" (New York Times 1968).

In August of 1969, an 8-y plan was prepared by the U.S. government for the resettlement of Bikini Atoll in order to give the crops planted on the islands a chance to mature. The first section of the plan involved the clearing of the radioactive debris on Bikini Island. This segment of the work was designed by the AEC and the U.S. Department of Defense. Responsibility for the second phase of the reclamation, which included the replanting of the atoll, construction of a housing development, and the relocation of the community, was assumed by the Trust Territory government.

By late in the year of 1969, the first cleanup phase was completed. The AEC, in an effort to assure the islanders that their cleanup efforts were successful, issued a statement that said: "There's virtually no radiation left and we can find no discernible effect on either plant or animal life" (AEC 1969).

All that was theoretically left now in order for the people to return was for the atoll to be rehabilitated, but during the year of 1971 this effort proceeded slowly. The second phase of the rehabilitation encountered serious problems because the U.S. government withdrew their military personnel and equipment. They also brought to an end the weekly air service that had been operating between Kwajalein Atoll and Bikini Atoll (Mic. Supp. Com. 1984). The construction and agricultural projects suffered because of the sporadic shipping schedules and the lack of air service.

In late 1972, the planting of the coconut trees was finally completed. During this period it was discovered that as the coconut crabs grew older on Bikini Island they ate their sloughed-off shells. Those shells contained high levels of radioactivity, hence, the AEC announced that the crabs were still radioactive and could be eaten only in limited numbers. The conflicting information on the radiological contamination of Bikini supplied by the AEC caused the Bikinian Council to vote not to return to Bikini at the time previously scheduled by American officials. The Council, however, stated that it would not prevent individuals from making independent decisions to return.

Three Bikinian families, their desire to return to Bikini being great enough to outweigh the alleged radiological dangers, moved back to Bikini Island and into the newly constructed cement houses. They were accompanied by approximately 50 Marshallese workers who were involved in the construction and maintenance of the buildings.

The population of islanders on Bikini slowly increased over the years until in June of 1975, during regular monitoring of Bikini, radiological tests discovered "higher levels of radioactivity than originally thought." U.S. Department of Interior officials stated that "Bikini appears to be hotter or questionable as to safety" and an additional report pointed out that some water wells on Bikini Island were also too contaminated with radioactivity for drinking. A couple of months later the AEC, on review of the scientists data, decided that the local foods grown on Bikini Island, i.e., pandanus, breadfruit and coconut crabs, were also too radioactive for human consumption. During medical tests, urine samples from the 100 people then living on Bikini

detected the presence of low levels of ^{239}Pu and ^{240}Pu. Robert Conard of Brookhaven Laboratories commented that these readings "are probably not radiologically significant."

In October of 1975, after the contemplation of these new, terrifying and confusing reports on the radiological condition of their atoll, the Bikinians filed a lawsuit in U.S. federal court demanding that a complete scientific survey of Bikini and the northern Marshalls be conducted. The lawsuit stated that the U.S. had used highly sophisticated and technical radiation detection equipment at Enewetak Atoll, but had refused to employ it at Bikini. The effect of the lawsuit was to convince the U.S. to agree to conduct an aerial radiological survey of the northern Marshalls in December of 1975. Unfortunately, more than 3 y of bureaucratic squabbles between the U.S. Departments of State, Interior and Energy over costs and responsibility for the survey, delayed any action on its implementation. The Bikinians, unaware of the severity of the radiological danger, remained on their contaminated islands.

While waiting for the radiological survey to be conducted, further discoveries of these radiological dangers were made. In May of 1977, the level of radioactive ^{90}Sr in the well water on Bikini Island was found to exceed the U.S. maximum allowed limits. A month later a Department of Energy (DOE) document stated that "All living patterns involving Bikini Island exceed Federal [radiation] guidelines for thirty year population doses." Later in the same year, a group of U.S. scientists, while on Bikini, recorded an 11-fold increase in the ^{137}Cs body burdens of the more than 100 people residing on the island. Alarmed by these numbers, the DOE told the people living on Bikini to eat only one coconut per day and began to ship in food for consumption.

In April of 1978, medical examinations performed by U.S. physicians revealed radiation levels in many of the now 139 people on Bikini to be well above the U.S. maximum permissible level. The very next month U.S. Interior Department officials described the 75% increase in radioactive cesium as "incredible." The Interior Department then announced plans to move the people from Bikini "within 75 to 90 days," and so in September of 1978, Trust Territory officials arrived on Bikini to once again evacuate the people who were living on the atoll. An ironic footnote to the situation is that the long awaited northern Marshalls radiological survey, forced by the 1975 lawsuit brought by the Bikinians against the U.S. government, finally began only after the people were again relocated from Bikini.

Pero Joel, a Bikinian elder involved in the aborted move back to Bikini in the 1970's, describes his experience of living on his traditional, though radioactive, homeland for the first time in 25 years. Pero uses the word all Marshallese people use for radiation: "poison." As a person often employed in the translation of the Marshallese language, I believe this phenomena was a result of amateurish translation attempts by Americans trying to describe the dangerous attributes of radioactivity:[‖]

> Once I had heard that the U.S. government was proclaiming that Bikini was safe and free from poison, I began to have overwhelming thoughts of joy. I immediately began requesting that they send a ship to pick up me and my family from Rongelap, where we were living at the time, so that we, too, could go to Bikini and get involved in the restoration. The ship finally did arrive and took us to Bikini where we began living in a house on the southern end of the island in a town we called Lokwerkan, which the U.S. government had built for us.
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> I worked on Eneu and Bikini planting crops, pulling weeds, and, in general, refurbishing the islands. I felt so happy, peaceful and proud, and why not? It was our land, our islands, and we were content to be there working and living there. We felt that we belonged on Bikini because it is the place that God had given us.
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> During the cleanup, life on Bikini was not like these days where we worry about everything and find ourselves always bickering with each other. The only problems we encountered were due mainly to the fact that we had no reverend with us. But we really didn't have any worries until those scientists started talking about the island being poisoned again. You see, right before they began warning us about the coconuts, pandanus and the crabs being unsafe, the ships had started coming much more infrequently, and so we had to rely heavily on our local food.
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> On Eneu we had gardens and on Bikini we drank coconuts and ate pandanus all the time. I was one of the people helping to make those gardens. We were told in the beginning of our stay on Bikini that it was safe to eat anything that we wanted, so we did. We had many kinds of foods, bananas and things like that. The scientists would come and explain a little about the radiation, but we were always under the impression that everything was safe and that we could go about our everyday business and not worry. I used to ask them a lot of questions like, "How deep into the soil did the poison go?" When they would answer me they would say that it was about one foot deep into the ground, but that it wasn't anything for us to worry about.
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> Then the Americans started changing the rules on us. Before they had said that we shouldn't worry about the poison. Then they started saying that they weren't sure and that we shouldn't be drinking as many coconuts or eating coconut crabs, nor anything else that lived off the land, because maybe there was more poison in the soil than they had originally thought. I didn't understand this. It was if we were being told two totally conflicting rules that we had to follow at the exact same time: You know, "Well, it is safe for you people to live on Bikini, but there still is enough poison on the island that you shouldn't eat more than one coconut per day. . . " These statements confused us. Earlier they told us to eat what we want, and then they told us to go easy on the local food. I couldn't explain this even to myself, how was I supposed to make sense of it when I told these things to my family when they began to ask me questions?
>
> Finally, the Americans and their scientists came back a few years later saying that we had to leave Bikini. They said we had ingested too much poison and that it wasn't safe to live on Bikini anymore. We didn't care at this point because we had already started to get that hopeless feeling again; though

‖ Personal communication, Joel, P. 1989.

because we all wanted to stay on Bikini we did explore all possibilities in an attempt to find a way out of this problem. We kept thinking, the Americans first told us that it was safe to live here. Then they changed their minds and made some rules for us to follow. Now they are telling us to leave. Should we go?

We kept having meetings among ourselves that would last from sunup until sundown. We were so heartbroken that we didn't know what to do. But our islands were now again being declared poison. The Americans were telling us that we had to leave. We had to follow what they were saying because we really felt that we had no choice. If they say it is not safe to live there, we have to go, even though we hated departing from the islands where we had come to know peace and quiet for the first time in many years. We even asked them if we could stay on Eneu Island and we formulated a plan among ourselves where we were going to try to live by the airport, but they said we would have to wait until they knew more about the poison before we could remain anywhere on Bikini Atoll. And so we followed their wishes because we knew we shouldn't go against what the Americans say. We were sad, but we didn't want to make a problem for the Americans. If they say move, we move. . . The ship was in the lagoon the night before our departure. . . While leaning on the railing of the ship I drifted back in my mind to when I was still on Rongelap and first heard they were going to allow us to return to Bikini. I could have swam the whole way from Rongelap to Bikini [100 miles] I was so happy. Now we were going away from our homeland again. . . "

Another member of the aborted return to Bikini was Jukwa Jakeo, an outspoken elder who died in October of 1988. To get ready for a future cleanup of their atoll, a delegation of Bikinians went back to Bikini in April of 1987 to reestablish the traditional land boundaries that run in a vertical fashion across the island from the lagoon to the ocean side. While on Bikini, Jukwa had this to say about being back on his homeland for the first time since the second exodus:[¶]

The thoughts that I have now, as I stand again on Bikini, are very similar to the thoughts I had back when we were moved here in the 1970's: Happiness. I have another feeling, however. It enters my mind as I stand here, and it confuses me very much. That is: Why did they move us off our islands back then, telling us that they were poison, but we are able to return and visit here today?

I know we have come here to try to figure out the old boundary lines that divided our pieces of land. But when I stop to think about this task it is extremely difficult for me because I keep remembering all those conflicting statements and ideas that have been expressed about Bikini over the years since we were sent away by the Americans. Why are we setting boundaries on land that has already been declared unsafe?

The technical difficulties that we experienced in our attempts to reestablish the boundaries stem from the fact that all the natural surroundings and markers that we used to delineate the land partitions are now gone. They were destroyed by the U.S. government and all of their atomic bomb testing. Today, when we draw the lines, we are using estimations only. We are guessing. This inability to be accurate makes it impossible for us to mark the boundaries as they were before the testing period. Age has robbed me of my ability to think. These other old men here are simply making guesses. . . We are old men and our bodies are now tired and sore from all this work. We have argued with each other now our thoughts are all mixed up. We are so exhausted. The difficulties make me feel the happiness of our return less. It has been a long time from 1946 until now, more than 40 y that some of us have been gone from our homeland.

I want now to speak about land and the reason we Marshallese treasure it so highly. The land we sit on now as we talk is like gold. The ground that you walk on, from time to time and from day to day, no matter where you are in the Marshall Islands, is also like gold. If you were Marshallese and you didn't have any land you would be considered a bum, a drifter or a beggar. But if you were an owner of vast amounts of land you would be considered a very rich and wealthy man. Land is the Marshallese form of gold. To all Marshallese land is gold. If you were an owner of land you would be held up as a very important figure in our society. Without land you would be viewed as a person of no consequence. . . But land here on Bikini is now poison land. When I think of that as a consequence for my family members, it frustrates me. I apologize to them because I don't quite understand the depth of the situation here on Bikini. I am an uneducated man. I am Marshallese and I can't quite understand or tell what is safe and what is unsafe here. I can only have faith in the U.S. government. They have the responsibility for telling us what is good for us and what is dangerous. But for myself, my foresight and my knowledge concerning these radiation issues ends right here in front of my face. As I said this morning to those newsmen: I can't tell if these Americans who are working on this island are doing a poor job, or performing miracles of science. I am uneducated in these matters. I am unintelligent because I didn't go to school to study radiation science. So, I can only hope that the U.S. government will tell us the truth about Bikini, whether it is safe for us to live here now or in the future.

[¶] Personal communication, Jakeo, J. 1987.

REPARATIONS FOR DAMAGES

In 1978, after the people of Bikini were removed from their atoll for a second time, the U.S. government funded a $6 million trust fund titled The Hawaiian Trust Fund for the People of Bikini (U.S. Public Law 94-34). This trust fund currently produces $31,000.00 of income per month, which is used as a per capita distribution (approximately $14 per person per month). Because of a devaluation in the bond market over the past several years, and because expenditures were often more than the revenue of the trust, the fund today is worth approximately $5.3 million. Steps have been taken internally to correct the downward trend of this fund. This trust fund will exist until the year 2006.

In 1982, the people of Bikini received a second trust fund from the U.S. government totaling $20 million, titled The Resettlement Trust Fund for the People of Bikini (U.S. Public Law 97-257). This trust fund was later supplemented (U.S. Public Law 100-446) with $90 million in additional funds to provide for a cleanup of Bikini and Eneu islands of Bikini Atoll. These funds are also used for construction and resettlement activities for Bikinians living on Kili Island and Majuro Atoll. The usual fiscal year budget ranges from between $7 million

and $10 million. These funds pay for local government operations (Council employees, scholarships and a medical plan for Bikinian students living and going to school abroad, travel for meetings, attorneys fees, etc.) The total value of the fund as of 1 March 1996 is approximately $109 million.

In 1986, an agreement with the U.S. government, the Compact of Free Association (COFA), became effective. Section 177 of the COFA pledged reparations for damages to the Bikinians as well as to other northern atolls in the Marshall Islands. The damage payment to Bikini is $75 million over 15 y to be paid at a rate of $5 million per year. During each year, $2.4 million is distributed to the total population of Bikinians as a quarterly per capita payment. $2.6 million of this $5 million goes into a trust titled The Bikini Claims Trust Fund (U.S. Public Law 99-239). This trust fund also provides our community with an annual distribution of 35% of the income over a fiscal year. As of 1 March 1996, the Bikini Claims Trust Fund is worth approximately $32 million. While the quarterly payments end in the year 2002, the trust fund shall exist in perpetuity and shall continue to provide the Bikinians with an annual percentage of the income from the trust.

Mayor Tomaki Juda, the current leader of the Bikinian people and the youngest son of King Juda, had this to say about the changes in their culture brought about by the influx of money into their lives:[#]

> The American customs that we have adopted have changed some of the better Marshallese traditions of days gone past. Today we see, increasingly, that this way of life is steadily creeping—uncontrolled—into our society: Our cooperative traditions are eroding. Now, everything we do in our day to day lives involves competition. If you are not educated, you will be one of the poorest of people; if you have a car, and somebody wants to use it, they have to pay rent before they can drive off in it. This is the American way of life, and now we, the Bikinian people, fully understand how it works.
>
> We have incorporated many American customs and practices into our own. After the negotiations were finalized between the U.S. government and the Marshall Islands, both countries considered this new relationship to be one of free association. This tie to the U.S. has further brought to our attention the American styles and ways of life because the money that they give us, and that we use daily, is the American dollar. We buy American goods, in fact, most of the products sold in our stores come from America. Rice, tea, coffee, flour sugar, Spam, cola, corned beef, automobiles, VCR's and television. Our children grow up watching American movies. This causes our children, increasingly, to adopt the American value system and their customs as depicted on film. This phenomena greatly disturbs some of our elders who remember what our lives were like on Bikini. On the other hand, the new technology makes us more comfortable on this tiny island.

THE FUTURE

The tasks now before Mayor Tomaki Juda, Senator Henchi Balos, and the Bikini Council loom large. At the close of fiscal year 1995, all infrastructure for the cleanup of Bikini island was in place on Eneu island. Ground breaking ceremonies on Bikini occurred in February of 1997, just past the 51st anniversary of the peoples original relocation from their homeland. Options for cleanup methods for the island of Bikini are currently being discussed.

Since the early 1980's, the leaders of the Bikinian community have insisted that, because of what happened in the 1970's with the aborted return to their atoll, they want the entire island of Bikini excavated to a depth of about 15 inches. Scientists involved with the Bikinians have stressed that while the excavation method would rid the island of the ^{137}Cs, the removal of the topsoil would do great damage to the environment. The Council, however, feeling a responsibility toward their people, had contended that a scrape of Bikini was the only way to guarantee safe living conditions on their island for their future generations.

One suggestion put forth by the scientists is that they scrape only the living area, which is the lagoon side of Bikini, and then use potassium fertilizer on the remaining land area. After the issuance by the IAEA Advisory group in December of 1996 of its draft report, the Council concluded that it would give "serious consideration" to this option. Some islanders believe that if they scrape the island in a patchwork fashion—as opposed to an all out pancake-like excavation—the environmental impact could be minimized as one section could be refurbished and replanted before moving on to another. With the excess soil that is removed from the island, these Bikinians currently favor a plan to build a causeway between Bikini and Eneu islands. Another option often discussed by the Council regarding the storage of the contaminated soil involves shipping it to Nam island on the northwestern edge of Bikini Atoll where the Bravo crater is located. The soil would be stored on land.

In the long wait for their atoll to be radiologically cleaned, a number of flighty ideas and projects have surfaced for the Council's consideration. For example, during the late 1980's a number of companies expressed interest in salvaging the ships and the copper cable that rest on Bikini's lagoon as a result of Operation Crossroads. None of these schemes ever went forward due to a host of economic and logistical reasons. In 1995, a proposal for a nuclear waste storage project was introduced to the Bikinians for their consideration. With the talk of billions of dollars that might result from such an commercial endeavor, it was not surprising that a number of Council members were interested in studying this proposal. In March of 1995 the Bikini Local Government passed a Council resolution to research the idea of nuclear storage on Bikini. After two months of very emotional debate that weighed the immense profit potential of high-level nuclear waste storage vs. the possible damage that could be done to the atoll and the heavy political fallout for the community that would undoubtedly come from the other Pacific nations, the Bikini Council, in May 1995, passed a resolution stating that

[#] Personal communication, Juda, T. 1987, 1988.

they were no longer interested in pursuing the idea of nuclear storage for Bikini Atoll.

In early 1996, to provide an economic base for a possible future resettlement of Bikini Atoll and to supplement the income from their already existing trust funds, the Bikini Council signed an agreement with a local business in Majuro to establish dive tourism on Bikini. On the bottom of Bikini's lagoon rests the world's only aircraft carrier available for diving, the *U.S.S. Saratoga*, as well as the *Nagato*—Admiral Yamamoto's flagship from where he ordered the Japanese Imperial Navy's attack on Pearl Harbor at the beginning of World War II, along with seven other capital ships that have been buoyed. In 1996, a number of dive magazines proclaimed Bikini Atoll to be a world class dive destination.

The Bikini leadership continues to lobby the U.S. Congress for additional funding as the islanders maintain that it is the obligation of the U.S. government to provide for the cleanup of the entire atoll rather than just the two main islands.

While maintaining the integrity and the corpus of their trust funds, it has been the goal of the Council to take care of their people—wherever they may be—and at the same time to continue to move forward towards the radiological cleanup, and ultimately, the resettlement of Bikini Atoll. According to Kilon Bauno:**

> I want my future to be one that has no troubled times. I want a calm, peaceful existence for us all. I don't want my people to suffer anymore in my own lifetime or thereafter: I just want things to go along nicely, and for our lives to be normal and without worry. Those events that we experienced many years ago were just horrible. I would hate to see my people drift into that painful state of affairs again.
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> We want the Americans to continue to take care of us, and we want them to be part of our future. When I think of the years and years that it will take to clean Bikini until the poison is totally eradicated and therefore safe for our children, I get extremely depressed. I will die long before this occurs. I know that I won't be able to be buried in what I believe should be my final resting place by our custom, on the land of my ancestors, on Bikini Island.
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> I hope that my children, grandchildren and great grandchildren will find only peace in their lives. I hope that the islands that they will have to live and survive on will be suitable for them. I want them to refurbish our lands and experience good, wholesome lives together. . . One can't really ask God for anything more than that.

** Personal communication, Bauno, K. 1988, 1990.

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REFERENCES

Atomic Energy Commission. Report of Ad Hoc Committee to Evaluate the Radiological Hazards of Resettlement of Bikini Atoll. U.S. Government Printing Office, Washington, DC 1969

Ickes, H. Man to man. Honolulu Star Bulletin September 29, 1947.

Mason, L. Relocation of the Bikini Marshallese: A study in group migration. New Haven, Yale University; 1954. Dissertation.

Micronesian Support Committee. The Marshall Islands: A chronology 1944–1983. Honolulu, HI: Micronesian Support Committee; 11;1984.

Shurcliff, W. A. Bombs at Bikini: The Official Report of Operation Crossroads. New York, William H. Wise and Co.; 1947.

Juda, T. v. The United States. The United States Claims Court, No. 172-81L, Memorandum of Decision. 9; October 5, 1984.

Trusteeship Agreement for the former Japanese Mandated Islands, Article 6, 61 Stat. 3301, 80th Cong. 1st Sess. (1947) T.I.A.S. No. 1665. New York Times, August 13, 1968, p. 1.