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# THE STATUS OF NUCLEAR CLAIMS, RELOCATION AND RESETTLEMENT EFFORTS IN THE MARSHALL ISLANDS

## HEARING

BEFORE THE

## COMMITTEE ON RESOURCES
## HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

MAY 11, 1999, WASHINGTON, DC

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# HEARING ON STATUS OF NUCLEAR CLAIMS, RELOCATION AND RESETTLEMENT EFFORTS IN THE MARSHALL ISLANDS

**TUESDAY, MAY 11, 1999**

HOUSE OF REPRESENTATIVES,
COMMITTEE ON RESOURCES,
*Washington, DC.*

The Committee met, pursuant to call, at 11 a.m. in Room 1324, Rayburn House Office Building, Hon. Don Young [chairman of the Committee] presiding.

## STATEMENT OF HON. DON YOUNG, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALASKA

Mr. YOUNG. The Committee will come to order. The Committee is meeting today to hear testimony on the status of the nuclear claims and relocation resettlement in the Marshall Islands under rule 4G of the Committee rules. Any oral or opening statements in this hearing is limited to the Chairman and the Ranking Minority Member. This will allow us to hear from our witnesses who have traveled so far. If any other Members have statements, they can be included in the hearing record under unanimous consent.

Today the Committee on Resources hearing will be focussed on the status of nuclear claims, relocation, and resettlement of the four atolls in the Bikini, Enewetak, Rongelap, and Utirik and other radiological rehabilitation of the atolls.

These are complex issues involving scientific research, logistic engineering problems, financial and social challenges. However, above all else, the most important to the Committee are the people of the Marshall Islands who directly or indirectly were adversely impacted by the nuclear testing inadvertently.

Congress has oversight responsibility for Federal funds designated for the brief settlement and relocation of the people of the Marshall Islands who were affected by the United States' nuclear testing. Federal funding also provides for medical treatment compensation for nuclear-related injuries or damages and radiological rehabilitation of certain atolls.

This funding has been provided by also a series of trust funds and problematic assistance. The United States and the Marshall Islands have a special relationship based on decades of the United Nations trusteeship. Today the U.S. and RMI are separate sovereign nations in free association in our Compact of Free Association. Significant portions of the compact relate to the issues before the Committee today.

In fact, this Committee held over 30 hearings during the consideration of the compact legislation. Many of those hearings attempted to identify the extent of the impact the U.S. nuclear testing program on the people and property of the Marshall Islands.

Due to the uncertainty of the safety of resettlement in certain atolls, Congress included a provision that provided for additional scientific tests, agriculture food assistance, and the possibility for additional monetary and other assistance in the future.

It was understood that the settlement, relocation, and radiological rehabilitation could present unforeseen challenges that might warrant additional assistance by the United States. Since the enactment of the compact in 1986, Congress has provided additional funding for those purposes.

I want to thank the delegation from the Marshall Islands who have traveled to Washington to participate in the Committee's hearing and briefing yesterday and the hearing today. Your presentations yesterday and today will provide valuable information to Congress regarding the status of nuclear claims, resettlement, and relocation efforts.

The independent scientific testimony and administration position statements today will also add to the record regarding the progress to date of these areas. I also want to thank the delegation for the fine hospitality shown to myself and to the Committee as we visited out there.

We are extremely pleased with the visit that we had and it was very informative.

[The information may be found at the end of the hearing.]

Mr. YOUNG. At this time, I will recognize the gentleman from California, the Ranking Member, Mr. Miller.

## STATEMENT OF HON. GEORGE MILLER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. MILLER. Thank you very much, Mr. Chairman; and thank you very much for conducting these hearings. In February of 1994, I conducted a lengthy investigation and held hearings because it became known to me that many of the facts surrounding the nuclear weapons testing in the Pacific during the 1950s had been withheld from Congress, the people of the Marshall Islands, and the public.

Information I received prior to the 1994 hearings strongly suggested that many people were affected by the fallout and the contamination of their homelands, many more than had been previously disclosed. This information caused me to push for the release of all pertinent information held by the U.S. Department of Energy on the testing program and the magnitude of its effects on the inhabitants of the local islands. This resulted in thousands of pages of documents being released to the honor of my government, and today we are here in part because of what have we have learned from those documents.

I hope the witnesses from the RMI will let us know how that process of receiving documents from the Department of Energy is going. Title 9 of the subsidiary agreement of section 177 of the Compact for Free Association contains language allowing for a re-

quest to the Congress for the compact renegotiations under what is known as a change in circumstances.

There is a finding that injuries that occurred were not or could not reasonably have been identified as of the enactment of the compact, that such injuries rendered the provisions of the agreement manifestly inadequate. I realize that this is not an immediate purpose of today's hearings, but I want those who are here today from the administration or from the RMI to know that I am very interested in what these newly released documents show us about what factions of the Federal Government knew and withheld over a decade during the compact negotiations.

This morning we will hear from testimony about how the United States-RMI relationship is proceeding specifically with regards to nuclear claims tribunal, relocation and resettlement issues; and I look forward to hearing from the administration on how the program is set up pursuant to the compact are working and if they are adequate to meet the needs and the goals.

Similarly, the Committee needs to know from the representatives of the Marshall Islands how cleanup and resettlement are proceeding from their perspective as well as from the comfort level of the U.S. Government studies and data. This relationship is a two-way street.

Much responsibility lies with the United States to compensate the people of the Marshall Islands to provide adequate health care, rehabilitate lands damaged during the testing program. The Republic of the Marshall Islands, however, also has responsibilities, as a sovereign government agreed to do.

Our two nations are intertwined and as we go into the next millennium, I look forward to that relationship to continue to the betterment of both peoples. I welcome both the administration to this hearing and to my old friends who have traveled a great distance from the Marshall Islands to be here today and to share their concerns and their thoughts.

[The prepared statement of Mr. Miller follows:]

STATEMENT OF HON. GEORGE MILLER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

In February of 1994 I conducted a lengthy investigation and held a hearing because it had become known to me that many facts surrounding the nuclear weapons testing in the Pacific during the 1950's had been withheld from Congress, the people of the Marshall Islands, and the public. This was not, and is not, acceptable to me. Prior to that time we had all been told that only 267 people were exposed to fallout from the BRAVO tests, and that exposure was an accident caused by a last minute shift in the wind and failure to anticipate the bomb would yield so much power.

Information I received prior to the '94 hearing strongly suggested that many more people were affected by the fallout and contamination of their homelands. This information caused me to push for the release of all pertinent information held by the U.S. Department of Energy on the testing program and the magnitude of its effects on the inhabitants of the local islands. This has resulted in thousands of pages of documents being released to the RMI government. Today we are here, in part, because of what has been learned from those documents. I hope the witnesses from the RMI will let us know how the process of receiving documents from the Department of Energy is going.

Title IX of the susidiary agreement to Section 177 of the Compact of Free Association contains language allowing for a request to Congress for compact renegotiation under what is known as "changed circumstances" is there is a finding that injuries occurred that "were not and could not reasonably have been identified as of (enactment of the compact) and that such injuries rendered the provisions of this Agreement manifestly inadequate." I realize this is not the immediate purpose of today's

hearing but I want those here today from the Administration and the RMI that I am very interested in what these newly released documents show about what factions of the Federal Government knew and witheld during over a decade of compact negotiation.

This morning we will hear testimony about how the U.S.-RMI relationship is proceeding specifically with regard to the Nuclear Claims Tribunal, relocation, and resettlement issues. I look forward to hearing from the Administration on how the programs set up pursuant to the Compact are working and if they are adequate to meet the needs and goals. Similarly, this Committee needs to know from the RMI representatives how cleanup and resettlement are proceeding from their perspective as well as their comfort level with U.S. government studies and data.

This relationship is a two way street—much responsibility lies with the United States to compensate the RMI people—to provide adequate health care and rehabilitate lands damaged during the testing program. The RMI, however, also has responsibilities it has, as a sovereign government, agreed to do. Our two nations are intertwined and as we go into the next millennium I look for this relationship to continue to the betterment of both our peoples.

I welcome my old friends who have traveled a great distance from the Marshall Islands to be here with us today and look forward to hearing from you.

Mr. YOUNG. I thank the gentleman. Now we will call the first panel up. Mr. Ralph Boyce, Deputy Assistant Secretary of State; Mr. Allen Stayman, director of Insular Affairs, Interior Department; the Honorable Kurt Campbell, Deputy Assistant Secretary, Asian Pacific Affairs; the Honorable Paul Seligman, M.D., M.P.H., Deputy Assistant Secretary of Health Services, Department of Energy.

I believe we will go right down the line. Mr. Ralph Boyce will be the first to testify. I want to remind our witnesses that I would be somewhat lenient, but try to limit your oral statements to 5 minutes. You can give as long of a written statement that you wish to do so. But in respect to the other witnesses, trying to keep it to 5 minutes is necessary. Mr. Boyce.

## STATEMENT OF RALPH L. BOYCE, DEPUTY ASSISTANT SECRETARY OF STATE, EAST ASIAN AND THE PACIFIC AFFAIRS, DEPARTMENT OF STATE

Mr. BOYCE. Thank you, Mr. Chairman. I do have a written statement which I will submit for the record, and I will try to summarize it in under 5 minutes at this time. As Deputy Assistant Secretary of State responsible for the freely associated states as well as the region of southeast Asia and the rest of Oceania, I am pleased to have the opportunity to appear before the Committee with my colleagues from Interior, Energy and Defense.

The United States' relationship with the Republic of the Marshall Islands, one of the three freely associated states, is a unique and important part of our posture in the Pacific, and the political relationship itself is defined in the Compact of Free Association. The compact established a special relationship between the U.S. and the Republic of the Marshall Islands that is distinct from other nations.

In addition to providing U.S. defense for the RMI and access to U.S. Federal domestic programs, the compact provides just under $1 billion in U.S. funding through the initial 15-year period of economic assistance. Mr. Chairman, we are approaching the 13th anniversary of the compact with the RMI, and under the terms of that agreement some elements will be up for renegotiation in October.

We have established an office of the special negotiator in the Department of State to be led by my colleague, Allen Stayman, to my left here. As we continue preparations for that renegotiation, we are reviewing the effectiveness of the various U.S. programs and activities and assistance in the RMI.

While both sides have learned a great deal over the past 13 years, quite frankly there are some troubling signs regarding the commitment of the RMI to some of the goals of the compact. In particular, the RMI has what would have to be termed a spotty record of reform on the economic side hampered by an inefficient public sector, rising unemployment, and declining per capita income.

The government has exhausted its financial holdings and borrowing capacity. The foreign investment climate is, quite frankly, not attractive. Controversy surrounds the government's management of funds established to provide compensation for claims related to the period 1946 to 1958 nuclear testing program of the United States.

There are also complaints that there has been some manipulation of the criteria by which claimants are determined to be eligible for programs supported by these funds and the subscriber base has been inflated quite dramatically.

Mr. Chairman, unique to the RMI is the U.S. obligation regarding the nuclear claims. As you know, the U.S. carried out 66 nuclear tests at Bikini and Enewetak atolls between 1946 and 1958. These atolls were evacuated prior to testing.

However, on February 28, 1954, a thermonuclear device code named BRAVO was detonated at the Bikini atoll. The energy yield of this experimental device exceeded predictions; and sudden wind changes sent the cloud of radioactive debris unexpectedly eastward over land rather than over open seas to the north. Consequently the populations of Rongelap and Utirik were showered with radioactive debris for two to three days before being evacuated to the Kwajalein atoll for medical care.

The United States has accepted full responsibility for the health and environmental damage caused by the U.S. nuclear testing program under the oft-cited section 177 of the compact. The implementation agreement of the compact with the RMI states that this is the, quote, "full settlement of all claims past, present, and future," unquote, related to nuclear testing and at the time that the RMI agreed to the sum of $150 million.

However, the compact provides that under certain circumstances the RMI may submit a request for Congress for its consideration by recognizing, of course, that this provision does not commit Congress to appropriate funds. So in addition to the $150 million that is in the compact settlement, the United States has provided about $300 million in various compensation, medical care, food supplies, environmental cleanup, and funds for resettlement.

My written testimony contains a more precise breakdown of these figures. As I mentioned, the compact allows the RMI to submit a request for additional compensation to the U.S. Congress if there are changes in circumstances. We have heard for some time there may be such a request.

We have given our assurance to the Marshall Islands government that we will do everything that we can to assist Congress in considering such a request should it be submitted.

Regarding the relationship between nuclear issues and the renegotiation of the compact, Mr. Chairman, we believe that the negotiations should be limited to what the Congress and the compact call for.

Just summarizing the end here, sir, thank you for the opportunity to present testimony to this Committee at this time, and I will gladly answer any questions that you might have after the other witnesses have spoken on behalf of the Department of State. Thank you.

Mr. YOUNG. Thank you, Mr. Boyce. Again, until I rap the gavel you don't have to wrap it up. I just meant as sort of a reminder, those little lights there. I do thank you.

Mr. BOYCE. That was close to a wrap, Mr. Chairman.

[The prepared statement of Mr. Boyce follows:]

STATEMENT OF RALPH BOYCE, DEPUTY ASSISTANT SECRETARY, BUREAU OF EAST ASIAN AND PACIFIC ISLAND AFFAIRS, DEPARTMENT OF STATE

Thank you Mr. Chairman. I am pleased to have the opportunity to appear before the Committee with my colleagues from the Departments of Interior, Energy and Defense. I look forward to discussing our bilateral relations with the Republic of the Marshall Islands, specifically with regards to the relocation and resettlement of the inhabitants of the four atolls affected by atmospheric nuclear testing, Bikini, Enewetak, Rongelap and Utirik. My responsibilities as Deputy Assistant Secretary for East Asian and Pacific Affairs include the Freely Associated States, specifically the Republic of the Marshall Islands. I have not yet had the opportunity to visit the Marshall Islands. A trip scheduled for earlier this year proved unworkable. However, I hope to include the RMI in my travels, certainly before the end of the year.

**Background on Our Unique Relationship**

The United States' relationship with the Republic of the Marshall Islands, one of three Freely Associated States, is unique and one which is an important part of our posture in the Pacific. The Freely Associated States (the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau) were formerly part of the Trust Territory of the Pacific Islands. These islands were administered by the United States after 1947 under a United Nations Strategic Mandate. In the 1970s the United States entered into discussion with representatives of the various islands on their future-political status, a process which had different outcomes for the four island groupings in the Trust Territory. The RMI chose to become a sovereign nation in free association with the United States. In June 1983, we reached an agreement with the RMI—a Compact of Free Association. Approved and enacted into law by Congress in January 1986, and endorsed by the United Nations later that year, our Compact with the RMI officially went into effect on October 21 of 1986.

The Compact established a special relationship between the United States and the Republic of the Marshall Islands, one which differs from that with other nations in several distinct ways. Although the RMI is a sovereign power, the U.S. provides the people of the RMI access to direct services of over forty U.S. Federal domestic programs and to U.S. Government funding for budgetary and technical assistance grants at a per capita rate greater than U.S. assistance to almost any other foreign government. We take responsibility for the security and defense of the RMI in return for foreclosure of third country access to the Marshall Islands for military purposes—what we have called "strategic denial." Also, we give RMI citizens the right to work and live in the United States as nonimmigrant residents within the parameters laid out in the Compacts.

**Compact of Free Association to Be Negotiated**

We are approaching the 13th anniversary of our 15-year Compact with the RMI and, under the terms of the Compact, some elements of the agreement will soon be up for renegotiation. Under the terms of the Compact, negotiations should begin in October 1999, two years before the 15th anniversary of the Compact (October 2001). We are establishing an Office of the Special Negotiator to be located in the Department of State which will house the interagency team that will conduct these negotiations.

Why did we enter into the Compact in the first place and why are we renegotiating it? The U.S. entered into the Compact of Free Association, first, because the U.S. was obligated as administrator of the U.N. mandated Trust Territories, "to promote the development of the inhabitants of the trust territories toward self-government or independence as may be appropriate to the particular circumstances of the trust territory and its peoples, and the freely expressed wishes of the peoples concerned."

Second, in the Cold War environment of the mid-1980s, the United States was keen to bolster its security posture in the Pacific. Within the framework of the Compact, the principle of strategic denial guaranteed the U.S. exclusive military access to these countries and their surrounding waterways. Third, our agreement with the RMI ensured continued access to U.S. Army Kwajalein Atoll (USAKA)/Kwajalein Missile Range, and our agreement with the Republic of Palau, the last of the Freely Associated States to sign a Compact, included the right to develop a military base should the U.S. need an alternative to the Philippines.

Kwajalein Missile Range is considered to be a "national asset" and is currently the premier facility in the world for testing Theater Missile Defense. We have invested over $4 billion in this facility. The lease for Kwajalein Atoll expires in 2001. However, our Compact with the RMI provides for automatic renewal rights for an additional 15 years if the U.S. chooses to do so.

As we move towards renegotiations, we are reviewing the effectiveness of U.S. programs and assistance in the RMI. While both sides have learned much over the past 13 years, there are troubling signs regarding the commitment of the RMI to the goals of the Compact. The RMI has a spotty record of reform, hampered by an inefficient public sector, rising unemployment, and declining per capita income. The government has exhausted its financial holdings and borrowing capacity. The foreign investment climate is not an attractive one. Much controversy surrounds the government's management of funds established to provide compensation for claims related to the 1946-58 U.S. Nuclear Testing Program. There are complaints that manipulation of the criteria by which claimants are determined eligible for programs supported by these funds has led to a huge inflation of the subscriber base.

**U.S. Responsibilities to the RMI**

Regarding U.S. Government obligations to the RMI, we have fulfilled our responsibility under the United Nations mandate to prepare the territory for self-governance. The RMI is self-governing and responsible for its own foreign affairs. We have exchanged diplomatic representatives with the RMI and the government of the Marshall Islands has done so with other nations besides the U.S. The RMI also holds membership in international organizations including the U.N., IMF and the World Bank, and regional organizations such as the South Pacific Forum and the Asian Development Bank.

Under the original Compact legislation, the United States pledged to help each of the three Freely Associated States move toward economic self-sufficiency. Our provision of Federal aid and services has been partially successful in fostering economic self-sufficiency. For many reasons the RMI has made slow progress in undertaking the reforms necessary to transform its economy. As we move towards negotiations, the Congress and the Administration are faced with the challenge of addressing past policy failures on both sides in order to improve RMI economic performance.

**U.S. Obligation for Nuclear Claims**

Unique to the RMI is the U.S. obligation relating to nuclear claims. The U.S. carried out 66 underwater and atmospheric nuclear tests at Bikini and Enewetak atolls in the Marshall Islands between 1946-58. Two atolls, Bikini, at the time with a population of 167, and Enewetak, population of 145, were evacuated prior to testing. On February 28, 1954, a thermonuclear device, code-named Bravo, was detonated at Bikini Atoll. The energy yield of this experimental device exceeded predictions and sudden wind changes sent the cloud of radioactive debris unexpectedly eastward over land rather than over open seas to the north. Consequently, the populations of Rongelap (86 people) and Utirik (167 people) were showered with radioactive debris for two to three days before being evacuated to Kwajalein Atoll for medical care.

In Section 177 of the Compact of Free Association (Public Law 99-239 enacted October 1986), the U.S. accepted responsibility for compensation owing to citizens of the RMI for loss or damage to property or person of RMI citizens resulting from the USG nuclear testing program between 1946 and 1958. The subsidiary agreement implementing this provision of the Compact constituted the "full settlement of all claims, past, present and future," related to nuclear testing. However, the Compact

provides that, under certain circumstances, the RMI may submit a request for additional compensation to the Congress for its consideration, recognizing that this provision "does not commit the Congress of the United States to authorize and appropriate funds." We have heard for some time that the RMI is preparing to submit a request for additional compensation to Congress for its consideration, and we will cooperate with Congress if, as we expect, Congress asks for our views on the request.

The U.S. has provided over half a billion dollars in compensation to the RMI for the U.S. nuclear testing program through congressional appropriations and Federal services, such as the Department of Energy medical health program and the U.S. Department of Agriculture surplus food assistance. Compensation and assistance has included:

—$150 million in 1986 under the Compact to create a Trust Fund for the health care and compensation for nuclear claims for the populations of the four atolls affected by the Nuclear Testing Program—Bikini, Enewetak, Rongelap and Utirik. The government of the Marshall Islands established the trust fund and a Nuclear Claims Tribunal to adjudicate compensation claims. The claims paid have totaled approximately $63 million thus far to some 1,549 individuals.

In addition to the Trust Fund, the U.S. has provided in compensation, support and medical care:

—For Bikini: $6 million in 1978 and $110 million in 1982 in trust funds for the people of Bikini; $1.4 million in ex gratia payment in 1979, $1.754 million in food commodities from 1979-84 through USDA.

—For Enewetak: $102,000 compensation for removal in 1969; $20 million for clean up in 1977, $129 million for clean up activities in 1976, $12.4 million for resettlement in 1977, $20 million in agricultural support from 1980-96, $33.895 million in 1989 for the rehabilitation and resettlement of Enewetak, and an additional $10 million for the resettlement of Enjebi, part of the Enewetak atoll.

—For Rongelap: $11,000 to each Rongelapese exposed to fall out was paid in 1965; $6.42 million added to the Rongelap Compact Trust Fund in 1996.

—For Utirik: $1,000 to each Utrikese exposed to fall out paid in 1977; $25,000 to each Utirikese who underwent thyroid surgery.

All four atolls participate in the following programs:

—$3.8 million in food commodities: from 1988-94 through the U.S. Department of Agriculture to compensate the four-nuclear affected atolls for decreased agricultural capabilities resulting from the nuclear testing program. Present annual funding is $581,000. Continued assistance over the next five years is likely.

—$80.4 million from 1980-1997 for special medical care and treatment of the inhabitants of the four nuclear-affected atolls, environmental monitoring of the lands and radiological dose assessment monitoring through the Department of Energy for the radiation-exposed populations—originally 253 people—of Rongelap and Utirik. Today the Department of Energy Marshall Islands Medical Program serves 238 people (130 exposed persons and a control group of 107) with the cooperative support of the Departments of Defense and Interior.

—Two million dollars annually under the "Four Atoll Health Care Program" administered by the Department of the Interior for the people of the atolls of Bikini, Enewetak, Rongelap and Utirik who were affected by the consequences of the U.S. nuclear testing program, pursuant to the program described in Public Law 95-134 and Public Law 96-205 and their descendants (and any other persons identified as having been so affected if such identification occurs in the manner described in such public laws).

**Additional Compensation Possible**

Although, under the Compact, Section 177 constitutes the full settlement of all claims, it also allows the RMI to submit a request for additional compensation to the U.S. Congress for its consideration if

(a) loss or damage resulting from the Nuclear Testing Program arises or is discovered which could not reasonably have been identified as of the effective date of the agreement, and

(b) such injuries render the provisions of the Agreement "manifestly inadequate."

We have given our assurance to the Marshall Islands government that the Administration will assist Congress in considering its request should it decide to submit a request which meets these criteria.

**Resettlement of Marshall Islands Atoll Communities**

The U.S. takes seriously its commitment to resettle and rehabilitate those communities injured by the nuclear tests. From a legal and humanitarian standpoint, the

various agencies tasked with this undertaking have carried out their work with commitment.

**Enewetak**

The U.S. conducted 43 nuclear tests at Enewetak Atoll between April 1948 and 1958. In April 1980, Enewetak Atoll was returned to the Enewetak and today more than 900 Enewetakese reside there.

Is it safe to live in Enewetak Atoll? We believe so but that is a decision left up to the people of Enewetak to make based on the environmental data collected at Enewetak Atoll by the Department of Energy monitoring program. This data, coupled with the use of the latest dose models and international accepted intervention strategies, provide a sound basis upon which the Enewetak people and local government councils can make resettlement decisions regarding any island in the Enewetak Atoll chain.

The U.S. conducted clean up operations at Enewetak Atoll from 1977-80. Radiologically contaminated soil and debris present on many islands in the atoll were collected and deposited on Runit Island in a crater surrounded by a concrete key-wall and covered with a concrete cap. The crater is known as Cactus Crater and the concrete capped nuclear container as Runit Dome.

The National Academy of Science in a 1980 report said the Cactus Crater structure and its contents presented no credible health hazard to the people of Enewatak, either now or in the future. Subsequent monitoring of Runit Dome by the Defense Nuclear Agency and the Department of Energy found the dome to be structurally sound. It is the consensus of the USG and the people of Enewetak that Runit island should remain quarantined indefinitely because of the possible presence of plutonium at subsurface levels which might not have been located and removed during cleanup. This position stands as a precautionary measure despite DOE resuspension studies which show that such a quarantine is not necessary.

**Rongelap**

Rongelap atoll was showered by nuclear fallout when the U.S. detonated Bravo at Bikini Atoll on February 28, 1954. The local population (67 persons) was exposed to the fallout for two to three days before being evacuated to Kwajalein Atoll by the U.S. Navy. Nineteen Rongelapese temporarily residing on Ailingnae also were irradiated. The Rongelapese were returned to their island in 1957 where they remained until 1985. In 1985, the Rongelapese chose to move their community to Mejatto Island in Kwajalein Atoll. Following their evacuation to Kwajalein, Congress appropriated funds for the special care and treatment of the exposed Rongelap population, which has continued to this day under the DOE Marshall Islands Program. The Rongelapese are also eligible to receive medical care under the Section 177 Health Care program for the four affected atoll communities.

In 1965, the Atomic Energy Commission granted a payment of $11,000 to each exposed Rongelapese. In addition, each Rongelapese exposed who underwent thyroid surgery received $25,000. Under the Compact, Congress appropriated $37.5 million to the Rongelap Distribution Authority to be held in trust for the people of Rongelap. In addition, Rongalapese may request compensation from the Republic of the Marshall Islands Nuclear Claims Tribunal for personal injury and property damage claims.

In 1994, the National Academy of Sciences found that with appropriate mitigative measures, the people of Rongelap could return and live safely in their homeland. In February 1999 the Department of Energy executed a Memo of Understanding with the Rongelap Atoll Local Government for an environmental monitoring support plan for Rongelap Resettlement Activities. We have proposed a similar memo of understanding with the Enewetak/Ujelang Local Government Council.

**Utirik**

The 176 persons from Utirik atoll were similarly affected and evacuated. However, it was found that they had experienced minimal effects from the fall-out and that further examination was not necessary. A 1954 Atomic Energy Commission survey team working with the High Commission of the Trust Territory decided the Utirikese could return to their homeland and would be furnished with food and water from outside the area. In May of that year the Utirikese returned. Department of Energy carries out environmental radiological monitoring of Utirik and health monitoring of the inhabitants. Today 450 people reside on Utirik and there is no significant radiation problem on the atoll that requires any remediation.

**Bikini Atoll**

The U.S. conducted 23 nuclear tests on Bikini Atoll between June 1946-58. one hundred sixty-seven people were evacuated before the tests began. One hundred

twenty-five returned between 1972-74. Four years later, August 1978, the USG asked the Bikinians to leave due to concern that local food consumption was increasing cesium-137 body burdens and approaching levels in excess of internationally accepted radiation protection guidelines. (At the time, 500 mrem per year per individual dose). One hundred forty Bikinians departed.

There are now about 2,000 Bikinians, 650 living on Majuro, 125 on Ebeye, 1,000 on Kili and others in various locations including the U.S. The Bikini community held a groundbreaking ceremony on the island anticipating their resettlement in March 1997. About 25 have returned to Eneu, one of the islands in the Atoll. The Department of Energy's funded study by the National Academy of Sciences in 1994 recommends interventions but notes that the island can be inhabited again without increased risk to residents from residual radionuclides in the soil, if certain mitigative measures are taken. An IAEA study published in 1998 supports this.

The existing trust fund, now valued at some $110 million, should be sufficient for resettlement if the Bikini community decides to employ the remediation strategy of applying potassium to land area. However, another option, scraping the island, may be more costly.

The people of the four atolls affected by the nuclear testing in the Marshall Islands—Bikini, Enewetak, Rongelap and Utirik—find themselves in very different circumstances. In Rongelap, the leaders co-signed with Interior Secretary Babbitt their resettlement agreement in September 1996 and have since been able to return to Rongelap Island. Their restored airfield is in use and public facilities and homes have been constructed. Most of the people of Enewetak and Utirik have returned to their home islands. The people of Bikini in April 1998 sought a guarantee from Interior Secretary that the atoll is safe for resettlement. The answer is that it is for the people of Bikini to decide. Based on a September 1996 draft International Atomic Energy Agency Advisory Group report on radiological conditions at Bikini, we can say that Bikini Island is ready for permanent habitation as long as certain remedial measures are fully implemented.

**Conclusion**

We must distinguish the legislated responsibility for the resettlement of the peoples of Bikini, Enewetak, Rongelap and Utirik Atolls under the jurisdiction of the Department of Interior, from that of the general responsibility of the Department of State for the conduct of bilateral relations with the Republic of the Marshall Islands. Although the agencies have different roles, they must—and do—work together closely. The issue of resettlement is a sensitive one, especially to the populations of the individual atolls. Individual political leaders may take it upon themselves to promote a particular position outside of the framework of the RMI government. We remain open to all voices on this important matter and do not underestimate our responsibility. The U.S. Ambassador to the RMI, Joan Plaisted, has an ongoing dialogue with representatives of all of the atolls. Our role is to ensure that all of the people of the RMI receive what they are entitled to under the Compact without regard to individual or local political pressure.

To that end, the following issues will have to be addressed by the U.S. Government in the coming years:

—Changed circumstances: The U.S. Government will have to assess the circumstances when the RMI submits its request but we do not want to prejudge the outcome. The RMI has not yet submitted a request identifying changed circumstances and, under the Compact, Congress has the lead in considering any such request.

—Section 177 Management and the Nuclear Claims Commission: Section 177 is mandated for a pool of people who were exposed to radiation and their offspring. The Compact, including its subsidiary agreements, provides the terms for the full settlement of the nuclear' claims, and disbursements should be in accordance with that agreement. To the extent that the RMI considers that changed circumstances justify increasing the number of people who should be receiving compensation, or justify more funding for the Nuclear Claims Commission, those requests should be made to Congress in the process provided for in the Compact.

—Finally, regarding the relationship between these issues and Compact renegotiation: The Compact negotiations should be limited to what Congress and the Compact called for. Issues involving nuclear claims should remain separate and be dealt with in accordance with the terms of the Compact, including the subsidiary agreement and, if appropriate, through a request to Congress for consideration based on changed circumstances.

Mr. YOUNG. All right. Very good. Next is Allen Stayman, director of the Office of Insular Affairs, Department of Interior. Mr. Stayman.

**STATEMENT OF ALLEN P. STAYMAN, DIRECTOR, OFFICE OF INSULAR AFFAIRS, DEPARTMENT OF THE INTERIOR**

Mr. STAYMAN. Thank you, Mr. Chairman. The keystone of the United States policy regarding the nuclear testing program is section 177 of the Compact of Free Association. Here the United States, "accepts the responsibility for compensation owing to citizens of the Marshall Islands for loss or damage resulting from the nuclear testing program."

In fulfilling this obligation, the United States provided the Marshall Islands with $150 million to create an independent nuclear claims fund. Article 2 requires the fund manager to disperse fixed amounts for health, medical surveillance, and radiological monitoring and to the four atolls as payment for claims of injury.

Section 8 of this article obliges the governments of the four atolls to establish individual subtrust funds with all or a portion of these proceeds to "provide perpetual source of income," for the people of the atolls.

Article 4 of the subsidiary agreement requires the Marshall Islands government to establish a claims tribunal to determine awards for further compensation. Although section 177 provides for the full and final settlement claims for this payment of $150 million, article 9 provides that the Marshall Islands government may petition the Congress for additional compensation based on changed circumstances. The Marshall Islands government has indicated its intent to file such a petition, and the administration stands ready to assist the Congress in its consideration of such a request.

In addition to section 177, Congress authorized and funded several programs including resettlement programs for Bikini, Enjebi, and Rongelap, a USDA surplus food program, the work of the Department of Energy, and the Department of the Interior's agricultural and food program for Enewetak.

My colleagues from the Department of Energy will describe their program, and I would like to summarize briefly these other programs' effect on the four atolls.

Regarding Bikini, the Congress appropriated $90 million in 1988 for resettlement which was added to the $20 million appropriated in 1985. The legislative history notes that "these funds are provided to the Bikinians so that they and not the United States government will be responsible for the management and the decisions involved in returning to their homeland."

Representatives of Bikini have sought to know whether the United States government backs the 1996 report of the International Atomic Energy Agency on Radiological Conditions in Bikini. In a 1998 meeting with the Bikini leadership, Secretary Babbitt emphasized that the IAEA report was credible, reliable, and detailed and that the people of Bikini needed to consider the report's findings and then arrive at their own decision regarding the process and standards for resettlement.

Regarding Enewetak, the nuclear testing program heavily contaminated the atoll's northern half, and the southern islands were mostly covered by concrete for facilities used by the testing program. From 1977 to 1980, the United States government undertook a cleanup and resettlement program which included the atoll's revegetation. Revegetation continues under the Department of the Interior funded program.

For as long as the people of Enewetak need substantial amounts of off-island food, there will be a continuing need for supplemental Federal support such as provided by the USDA and the Department of the Interior programs. The Compact Act also established a $7.5 million resettlement trust fund for the Enewetak community of Enjebi island.

Regarding Rongelap, a $45 million agreement to assist the people of Rongelap with resettlement was signed in 1996, and in 1998 the Rongelap government contracted for phase 1 of resettlement, which includes establishment of a base camp, the construction of essential infrastructure, and completion of remediation recommendations of the independent scientific management team.

The people of Utrik have the least significant rehabilitation problems and have secured the highest level of resettlement among the four atolls. The Congress did not provide a separate authorization for a resettlement program. Since 1993, the Office of Insular Affairs has reached a $45 million resettlement agreement with the government of Rongelap, regularly approved the budgets of Bikini and Rongelap governments, worked with the National Academy of Sciences and the Marshall Islands government nationwide radiological study, and has met regularly with the representatives from the four atolls.

Together we join our colleagues at Defense, Energy, and State in the faithful and active implementation of Federal responsibilities under the compact. Thank you.

Mr. YOUNG. Thank you, Mr. Stayman.

[The prepared statement of Mr. Stayman follows:]

**STATEMENT OF ALLEN P. STAYMAN**
**DIRECTOR OF THE OFFICE OF INSULAR AFFAIRS**
**DEPARTMENT OF THE INTERIOR**

**BEFORE THE HOUSE COMMITTEE ON RESOURCES**

**REGARDING RADIATION-RELATED MATTERS AND THE RESETTLEMENT, RELOCATION, AND RADIOLOGICAL REHABILITATION OF THE BIKINI, ENEWETAK, RONGELAP AND UTRIK ATOLLS**

**MAY 11, 1999**

Mr. Chairman. I am pleased to be here with you to discuss the status of nuclear claims, and relocation and resettlement efforts in the Marshall Islands. I wish to thank the representatives of Enewetak, Rongelap and Utrik Atolls, who are here and hosted my staff and me during our visit to their islands two months ago. I can personally attest to the benefits derived from learning first-hand about the lives of the peoples with whom our offices work. I look forward to visiting the people of Bikini on Kili during my next visit to the Pacific, I hope, before the end of next month.

## CLOSE, WORKING RELATIONSHIPS

As the official with day-to-day responsibility for all Federal financial and program assistance being provided to the Marshall Islands, the Director of the Office of Insular Affairs enjoys a close working relationship with the Marshall Islands Embassy in Washington, D.C. The Marshall Islands' Ambassador and Minister to the United States, the Honorable Banny de Brum and Mattlan Zackhras, and their assistant, Ms. Holly Barker, serve the people and government of the Marshall Islands with the greatest ability and spirit of cooperation. As during the tenure of the prior Ambassador, the Honorable Wilfred Kendall, now a distinguished member of the *Nitijela*, the Marshall Islands Embassy is a valued partner with the United States Government in advancing the welfare of the peoples of the four nuclear-affected atolls.

## SECTION 177

The keystone of United States' policy regarding the nuclear testing program is Section 177 of the Compact of Free Association, the subsidiary agreement implementing that section, and the law approving it. Here as elsewhere, the United States Government "accepts the responsibility for compensation owing to citizens of the Marshall Islands . . . for loss or damage . . . resulting from the nuclear testing program . . . conducted . . . between June 30, 1946, and August 18, 1958." In fulfilling its obligations under Section 177, the United States Government provided to the Marshall Islands Government one hundred fifty million (150,000,000) dollars to create an independent nuclear claims fund. Under Article I, Section 1, the Marshall Islands Government is to invest these funds with the goal of producing $18 million annually for disbursement.

Article II, Distribution of Annual Proceeds, requires the Fund Manager to disburse to the Government fixed amounts for health ($2 million annually for 15 years), medical surveillance and radiological monitoring ($1 million annually for 3 years), and to the fixed amounts in payment of claims for loss or

damage to property and person including: $75 million for the people of Bikini, $48.75 million for Enewetak, $37.5 million for Rongelap and $22.5 million for Utrik. These disbursements are to be made in 60 quarterly payments over 15 years. Section 8 of this Article obliges the governments of the four atolls, in order to provide long-term means to address the consequences of the nuclear testing program, to establish individual trust funds "with all or a portion" of the proceeds received under Section 177 to "provide a perpetual source of income" for the peoples of the atolls (article II, section 8, sentence 2).

The subsidiary agreement empowers the government of each of the four atolls to take these funds and to choose whether they should "be distributed, placed in trust or otherwise invested (last phrase of sections 2-5 of article II).

## FOUR-ATOLL HEALTH CARE

Under Article II, Section 1(a), of the Section 177 Subsidiary Agreement, the Fund Manager disburses two million (2,000,000) dollars annually to the Marshall Islands Government to provide for the four-atoll health care program. Over the years of *Compact I* the Federal funds allocated under just this one subsection will total thirty million (30,000,000) dollars, with a possible four-million-dollar extension until October 21, 2003. These funds are in addition to the amounts provided to the four atolls as their share as constituent governments of the Marshall Islands under Compact sections 216(a)(2) [$1,791,000 annually for nationwide health and medical programs, including referrals] and 221(b) [$10,000,000 annually for education and health care]. Still in article II, section 1(d) provides the supplemental food program to which I refer on page six of this statement.

## CLAIMS TRIBUNAL

Article IV of the Section 177 Subsidiary Agreement requires the Marshall Islands Government to establish a claims tribunal, independent of the powers of both the President of the Marshall Islands and the *Nitijela*, to render final determination upon all claims related to the nuclear testing program and upon all disputes arising from distributions of the nuclear claims fund. $45.75 million is to be available "for whole or partial payment" of claims, to be disbursed up to $2.25 million during the first 3 years and $3.25 million during the next 12 years. As of the most recent figures available to my office, the overall, net personal injury compensation totals sixty-three million, one hundred twenty-seven thousand (63,127,000) dollars as of December 31, 1997. This represents sixteen hundred eighty-five (1685) awards to or on behalf of fifteen hundred forty-nine (1549) individuals.

Although Section 177 provides for the "full and final settlement of claims" in the payment of one-hundred fifty million dollars, it also provides that the Marshall Islands Government may at any time petition the Congress for additional compensation in the event of *changed circumstances* under article IX of the Section 177 subsidiary agreement. Such a request would, by definition, have to be based on the so-called *changed circumstances* that injuries resulting from the nuclear testing program in the Marshall Islands "were not and could not reasonably have been identified as of [October 21, 1986], and [that] such injuries render[ed] the provisions of this Agreement manifestly inadequate." Article IX of

the Section 177 Subsidiary Agreement goes on to say that the Congress is not committed to authorize or appropriate funds. Consequently, were the Congress to find that there was a *change in circumstances*, legislation would have to be enacted to authorize as well as to appropriate funds to provide further compensation for these injuries. The Marshall Islands Government has indicated its intent to file such a petition, and the Administration stands ready to assist the Congress in its consideration of such a request.

**OTHER AUTHORIZATIONS**

In addition to Section 177, the Compact Act authorized several resettlement programs (Bikini, section 103(l); Enjebi, section 103(k); and Rongelap, section 103(i)), the United States Department of Agriculture food program (section 103(h)(ii)(B)), the work of the United States Department of Energy (section 103(h)(i)), and my own department's agricultural and supplemental food program for Enewetak (section 103(h)(ii)(A)). My colleagues from the Department of Energy will describe their activities. I will detail how these other authorizations affect each of the four atolls.

**BIKINI: Background of Authorization and Funding**

In fulfilling the U.S. Government's obligations to the people of Bikini, the Congress appropriated ninety million (90,000,000) dollars over a five-year period for the clean-up and resettlement of Bikini, that was added to the twenty million (20,000,000) dollars appropriated in 1985. The Congress based its further appropriation on the full-faith-and-credit commitment contained in the Compact Act, section 103(l). Moreover, the Congress designed and intended this appropriation, in the words of the then Ranking Minority Member of the Committee on Energy and Natural Resources, Senator James A. McClure (Rep.-Idaho), on the floor of the Senate on September 8, 1988:

> to fulfill both the moral and legal commitment of the U.S. Government to the people of Bikini contained in section 103(l) of the Compact Act . . . and in article VI of the Compact Section 177 Agreement . . . and . . . to provide for the full and final settlement of all claims arising from the Nuclear Testing Program. . . . There are those who may incorrectly argue that this appropriation is made outside of the Section 177 Agreement and therefore Congress did not intend for section 177 to provide a final settlement. The opposite is true. . . . It is intended that these funds will be deposited in the existing resettlement trust fund - of approximately $20 million - and that the terms of that trust will be modified to provide that the *corpus* and income from the trust may be used for the rehabilitation and resettlement of Bikini Atoll and that up to $2 million per year[1] may be

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[1] In enacting the Department of the Interior Fiscal Year 1998 Appropriations Act (Public Law 105-83; November 14, 1997), the Congress increased this amount per fiscal year by five hundred thousand (500,000) dollars.

> used for projects on Kili and Ejit[2]. Following rehabilitation and resettlement, these funds will no longer be available to Kili and Ejit, and any funds remaining in the trust, not identified for future needs, shall be deposited in the U.S. Treasury. It is anticipated that these future needs . . . will include: first, maintenance of the resettlement infrastructure until the Bikinians are prepared to assume that task; second, training the Bikinians for the operations and maintenance of the infrastructure; . . . . Once this objective is reasonably met, then all funds in the trust shall revert to the United States. The people of Bikini will then need to rely on other funds, such as the other $75 million provided pursuant to [the Section 177 Subsidiary Agreement, article II, section 2], . . . . In the context of the Section 177 Agreement the Bikinians will have accepted this trust arrangement as full and final discharge of all United States obligations . . . related to their relocation from Bikini . . . and no further appropriations will be required in order, finally, to have fulfilled the United States commitments to the Bikini people, except as provided under article IX of the Section 177 Agreement.

Right from this inception of Congressional funding of the separate Resettlement Trust Fund for the People of Bikini, the U.S. Government had as its full-fledged partner the people and local government of Bikini. As the then Chairman of the Committee on Energy and Natural Resources, the Honorable J. Bennett Johnston (Dem.-La.), noted on the floor of the Senate on September 8, 1988:

> The work of the Bikini Atoll Rehabilitation Committee (BARC) . . . provided the information needed to quantify the obligation of the United States Government to clean up and resettle Bikini. It was from the BARC information that this $90 million appropriation was developed. . . . [L]anguage was specifically included in the statute to rebut any indication that enactment of the Compact did not constitute a full and final settlement and a complete and absolute bar to either continued or further litigation. The analysis . . . set forth in the record at the time of passage is clear: . . . '[A]dditional *ex gratia*' - and I want to emphasize the words '*ex gratia*' - 'assistance will be available in the future if circumstances warrant and this provision in no manner lessens the concern which we have for the population of the affected atolls.' . . . These funds are provided to the Bikinians so that they, and not the United States Government, will be responsible for the management and the decisions involved in returning to their homeland. . . . It is the responsibility of the people of Bikini to . . . expend these funds so that they meet the objectives of rehabilitation and resettlement and provide for limited future needs. . . . All decisions and responsibilities for rehabilitation and resettlement of Bikini rest with the people of Bikini.

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[2] In enacting the Department of the Interior Fiscal Year 1992 Appropriations Act (Public Law 102-154; November 13, 1991), the Congress redefined "projects on Kili and Ejit" as "projects on Kili and all of Majuro Atoll."

**BIKINI: Current Circumstances**

While having a limited, on-island presence in their home atoll -- about twenty-five persons -- principally connected with the atoll government's commercial dive program, most Bikinians live in Majuro Atoll, including Ejit Island (about one thousand), or elsewhere in the Marshall Islands (about eleven hundred), principally Ebeye and Kili Islands and Lae Atoll.

Representatives of the people of Bikini have sought to know whether the United States Government backs the September 1996 final draft International Atomic Energy Agency (IAEA) report on radiological conditions at Bikini. The IAEA Advisory Group concluded that:

(1) Bikini Island not be permanently resettled under the present radiological conditions without remedial measures if inhabitants were going to eat entirely locally produced foodstuffs;

(2) the diet of the peoples of the Marshall Islands, including the people of Bikini, contained and would continue to contain a substantial proportion of radionuclide-free, imported food;

(3) provided certain remedial measures were taken, especially continued potassium fertilization, Bikini Island could be permanently reinhabited; and

(4) should such remedial steps be taken, radiation doses for people living on Bikini Island would be acceptable in terms of international standards and their health would be adequately protected against radiation exposure due to the atoll's residual radioactive materials.

Meeting with the senior Bikini leadership in his offices on April 21, 1998, Secretary Babbitt emphasized that the IAEA report was credible, reliable, and detailed, and that the elected leaders and voters of Bikini needed to consider the report's findings and then arrive at their own decision regarding the process and standards for resettlement. As the Secretary stressed, no one speaking of behalf of the Clinton Administration is going to deem Bikini "safe" or "unsafe". On behalf of the Department, the Secretary agreed with the IAEA Advisory Group that (1) no further independent measurement or assessment of radiological conditions at Bikini was necessary and (2) the people of Bikini needed a limited program of radiation monitoring, in which they themselves should participate.

**BIKINI: Other Issues**

There are two other issues specific to Bikini Atoll Local Government which I would like to raise in this statement, the supplemental food program and a proposed three *per centum* distribution from the Resettlement Trust Fund *corpus*. Concerning the first, because the people of Bikini have not returned to their home islands where they could grow their traditional crops, the U.S. Department of Agriculture (USDA) has provided supplemental food to the people of Bikini and the peoples of the other three radiation-affected atolls for more than twenty years. The authorization for this program has been extended by the Congress from time-to-time and we appreciate the action of the Congress in doing so again last year.

Regarding the second issue, in order to counter the effects of El Nino, the people of Bikini want a distribution of three *per centum* from their Resettlement Trust Fund *corpus* in order to purchase water catchments and to supply themselves with fresh water, food and other necessities during this emergency. However, the Department of the Interior believes that the Bikini Resettlement Trust Fund instrument does not provide for such an invasion of *corpus* and that it would need to be authorized by the Congress. If asked, we would be pleased to work with the Committee on this matter.

**ENEWETAK: Background of Authorization and Funding**

This atoll was the site of forty-three of the sixty-six nuclear tests conducted by the U.S. Government in the Marshall Islands 1948-58. The nuclear testing program inflicted serious damage to the atoll. Five islands were completely or partially destroyed; the remaining islands in the atoll's northern half, including Enjebi and Runit, were contaminated by radioactivity. The atoll's southern islands of Enewetak and Medren were mostly covered by concrete and asphalt as they were used for various facilities required by the nuclear testing program. As a result, the entire atoll was devastated, vegetation was completely stripped from many islands and nearly all vegetation was destroyed.

In order to permit the people of Enewetak to begin their return home, from 1977 to 1980, the U.S. Government undertook a resettlement program which included the clean-up of affected islands and the atoll's revegetation. Radiation-contaminated soil from this clean-up, was placed in a nuclear test-created crater on the north of Runit Island.

**ENEWETAK: Enjebi Trust Fund**

Section 103(k) of the Compact Act and the accompanying subsidiary agreement established an *ex gratia* trust fund for the Enewetak community from Enjebi and credited to the fund the amount of seven million, five hundred thousand (7,500,000) dollars, which the U.S. Government transferred to the Marshall Islands Government. Under article I, section 4, of the agreement, if the people of Enewetak from Enjebi resettle their island by October 21, 2011, the people will receive from the fund such amounts as will be necessary to re-establish their community and to replant their island appropriately. However, if they do not resettle by this date, then the fund manager will distribute the fund to the people for their resettlement at some other location. Whichever route the people of Enewetak from Enjebi take, prior to and during the distribution of the fund's *corpus*, they may receive at least quarterly the interest earned by the fund.

**ENEWETAK: Current Circumstance**

The resettlement program has included revegetating the atoll. Crops of coconut, pandanus, breadfruit, taro, bananas and lime have been planted since 1979: the planting continues as a part of the Office of Insular Affairs-funded Enewetak Food and Agriculture Program, whose funding level has been approximately $1,091,000 annually since fiscal year 1986. It is regrettable that the crops have never produced the projected quantity of food and do not now provide sufficient food for the people of Enewetak. The problem is exacerbated by having less than one-third of the atoll's land useable for food production. However, for as long as the people of Enewetak need substantial amounts of off-island

food, as recommended by the U.S. Department of Energy-Lawrence Livermore Laboratory's environmental rehabilitation program, there will be a need for some supplemental Federal support in this area, such as that provided by the United States Department of Agriculture's food program, and the Department of the Interior-funded agricultural program. This will remain constant even if Enewetak Government increases local food production significantly above current levels. It is especially true in light of Lawrence Livermore's well-based preference for potassium treatment instead of scrapping top soil.

Perhaps the most significant, bilateral issue outstanding is the condition of Runit Island, a responsibility that the Enewetak Government claims still rests with the U.S. Departments of Defense or Energy. The Federal position is that, although either or both Federal departments have occasionally sent personnel to inspect the condition of the Runit dome, this has been ex gratia. As article VII, sentence one, of the Section 177 Subsidiary Agreement states:

> The Government of the United States is relieved of and has no responsibility for, and the Government of the Marshall Islands, . . . shall have and exercise responsibility for, controlling the utilization of areas in the Marshall Islands affected by the Nuclear Testing Program.

The most positive aspect in the relationship between the Office of Insular Affairs and the people of Enewetak Atoll is the three-story Enewetak Elementary School, equipped with sixteen classrooms, and reconstructed from an abandoned Department of Defense facility by means of an appropriation to the Office of Insular Affairs. As a part of the continuing ties between my office and the leaders of Enewetak, the atoll's local government arranged for my staff and me to visit Enewetak this past March 10th, the first visit to Enewetak by an Interior official since at least 1986.

**RONGELAP: Background of Authorization and Funding**

A forty-five-million-dollar agreement to assist the people of Rongelap with resettlement was signed on September 19, 1996, in Washington, D.C., by the Secretary of the Interior and two of the witnesses for today's hearing, the Mayor of Rongelap Atoll, the Honorable James Matayoshi, and the Marshall Islands Ambassador to the United States, the Honorable Banny de Brum. In 1995, after years of studies and negotiations involving the Departments of the Interior and Energy, independent scientists, Congressional committees and representatives of the Rongelap people, the Congress set forth the general parameters for a final settlement in section 118(d) of Public Law 104-134 (April 26, 1996). In August 1996, after nearly three years of negotiations with Rongelap Government representatives, my office reached a settlement which the September 1996 agreement embodies.

The agreement's terms constitute, in accordance with section 118(d) of Public Law 104-134, "a full and final settlement of all obligations of the United States to assist in the resettlement of Rongelap Atoll" pursuant to section 103(i) of the Compact Act. The agreement requires the building of sufficient homes after construction of dock, water, electric, school, and local government facilities. Property will be surveyed, and cemeteries located.

The agreement provided thirty-nine million, seven hundred forty thousand (39,740,000) dollars for the resettlement of Rongelap, the fund then having eighteen million, one hundred twenty-seven thousand (18,127,000) dollars available. The balance of the nineteen million, five hundred thirty thousand (19,530,000) was provided by the Office of Insular Affairs through a reprogramming of surplus appropriations authorized by the Congress. The remaining amount, one million, nine hundred eighty-three thousand (1,983,000) dollars, was included in the fiscal year 1997 Department of the Interior appropriations. The balance of the settlement funding was derived from interest earnings on the Trust Fund. The agreement further provided that eight million (8,000,000) dollars be available as grants from my office and that the balance be placed in the Trust Fund.

**RONGELAP: Current Circumstances**

Of the one hundred (100) or so persons on Rongelap Island and surrounding islands in 1954, approximately seventy-three (73) are still living. The people of Rongelap are the least resettled of the four nuclear-affected communities with, approximately, eight hundred Rongelapese in Majuro Atoll and fourteen hundred on islands in Kwajalein Atoll. However, in partnership with the Clinton Administration, the people and government of Rongelap have outshone nearly all other Marshall Islanders for their unwavering commitment to rehabilitate and resettle their home island. On June 25, 1998, Rongelap Atoll Local Government and a contractor, Pacific International, Inc., signed a master contract for the construction of Phase I of Rongelap Island's resettlement. Generally speaking, Phase I includes establishment of a base camp, the construction of essential infrastructure and completion of the remediation recommendations of the independent scientific management team. The contractor is in the process of completing or has already completed the following on-island projects: constructing a dock, launching ramp, warehouse, maintenance buildings, a sanitary landfill and a field station to support forty persons; renovating the airport and roads; removing and replacing soil; producing and distributing electric power and water; storing water and fuel; and collecting and disposing of sewage. Operations and maintenance of these facilities are an integral part of the master contract.

Just as the atoll government asked me to inaugurate the new Rongelap City Hall in Majuro in November 1997, Rongelap Government arranged for me to visit Rongelap Island itself this past March 11th - the first visit by an Interior official since at least 1986 - for the grand opening of the Phase I facilities on Rongelap.

**UTRIK**

The people of Utrik number around three thousand, of whom about twelve hundred have resettled the islands of their atoll. Of the remaining eighteen hundred or so not in Utrik, approximately twelve hundred fifty live in Majuro Atoll and four hundred fifty on Ebeye Island. About one hundred Utrikese live in Honolulu or the mainland United States.

The Compact Act did not include an authorization for resettlement for the people of Utrik. Of the four nuclear-affected Marshall Islands atolls, Utrik has had only sporadic contact with the U.S. Government since 1986. Until June 26, 1998, when Secretary Babbitt received Utrik's senior leadership at the Department of the Interior, no one from Utrik had ever met a Secretary of the Interior or any

Department of the Interior official in Washington, D.C. The meeting between Secretary Babbitt and Utrik Government representatives established formal communications between the Department of the Interior and Utrik Government. Prior to the meeting, during the Clinton Administration, there were two other occasions when the Department of the Interior interacted with Utrik Government: at a U.S. Department of Energy meeting in May 1996 in Honolulu and a November 1997 meeting in Majuro at which the Mayor of Utrik and his fiscal officer and legal counsel had informal discussions with a member of my staff and me. The atoll's local government arranged for a member of my staff and me to visit Utrik this past March 9th, again the first visit by any Interior official since at least 1986.

Other than monitoring of environmental conditions on their islands, the people of Utrik have the least significant rehabilitation problems and have secured the highest level of resettlement among the four nuclear-affected atolls.

**ACTIVE IMPLEMENTATION OF FEDERAL RESPONSIBILITIES**

Since 1993, the Office of Insular Affairs has successfully: advocated the commitment of forty million (40,000,000) dollars to fund Rongelap resettlement; reached a resettlement agreement with the government of Rongelap Atoll; approved, on a regular basis, the budgets of the Bikini and Rongelap governments; worked with the National Academy of Sciences and the Marshall Islands Government Nationwide Radiological Study; and met regularly with representatives from the four atolls. Together, we join our colleagues at Defense, Energy and State in the faithful and active implementation of the Federal responsibilities under the Compact.

Attachment

**Summary of U.S. Funding for Nuclear-Testing-Related Islands**

**Compact Section 177 Nuclear Claims Settlement** (($150 million earning $18 million/year):

| Section | | Purpose | Amount | Total |
|---|---|---|---|---|
| Article II, | Sec. 1(a) | Health | $2 million/year x 15 years | $30 million |
| | (e) | Survey | $3 million/year x 3 years | $3 million |
| | Sec. 2 | Bikini | $1.25 million/quarter x 60 quarters | $75 million |
| | Sec. 3 | Enewetak | $812,000/quarter x 60 quarters | $48.75 million |
| | Sec. 4 | Rongelap | $625,000/ quarter x 60 quarters | $37.5 million |
| | Sec. 5 | Utrik | $375,000/quarter x 60 quarters | $22.5 million |
| | Sec 6(a)(b) | Tribunal Admin. | $500,000/year x 15 years | $7.5 million |
| | (c) | Claims | $2.25 million/year x 3 years<br>$3.25 million /year x 12 years | $45.75 million |

**Additional *ex gratia* Authorizations:**

| | | | |
|---|---|---|---|
| Sec. 103 (i) | Rongelap Resettlement | | $40 million |
| (k) | Enjebi Resettlement | | $7.5 million |
| (l) | Bikini Resettlement | | $90 million[3] |
| (h)(1) | DOE Marshall Islands | approx. | $6 million/yr |
| (h)(2) | USDA food for the 4 atolls | approx. | $800,000/yr |
| | Enewetak Agricultural prog. | | $1.1 million/yr |

[3] The $90 million Bikini Resettlement funding authorized in the Compact of Free Association was in addition to $20 million appropriated in 1985.

Mr. YOUNG. Dr. Campbell. You can wake up now. We are ready to go.

**STATEMENT OF KURT M. CAMPBELL, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR ASIAN AND PACIFIC AFFAIRS, INTERNATIONAL SECURITY AFFAIRS**

Dr. CAMPBELL. Just writing a last note, Mr. Chairman. I wanted to have it exactly right.

Thank you very much, Mr. Chairman, for this opportunity. I, too, will submit my testimony for the record and just make a couple of general remarks to save time for the panel for questions. I think, as you know, Mr. Chairman, and colleagues, that the Department of Defense has an absolutely unique role and unique responsibilities when it comes to the islands and the compact as a whole.

My testimony itself deals with the nuclear inheritance issues, and I will leave you to pursue that further if there is interest. I just want to say as we approach the renewal of discussions, negotiations about the compact, I believe that it is in the strong national security interest of the United States to maintain the full range of military access and security engagement with the islands.

It is our view that as we head into a critical period of testing and development of critical space systems and other aspects of the theater missile defense program, which both Congress and the administration feels is in the strong national interest of the United States and our key allies, that the role of the nations and the island nations will be absolutely critical in the next several years.

I must say that in the last several months and years that we have endeavored to do these tests, and when we have required more land and more area, that the Marshallese and the inhabitants of Kwajalein have been very responsible and very responsive when we have needed further area under short-term needs.

Let me make one final point, and then I will end before my time is up. I want to speak for a few minutes, if I can, about the central air services. Mr. Chairman, Congressman Miller in his opening statement made, I think, a very generous point that many members of the delegation, particularly from the Marshall Islands traveled a great distance to be here today.

They not only traveled a great distance, they traveled also at great cost, and we must have to acknowledge a great inconvenience as well. Air lines and air service into the Marshall Islands are running now between two and three months booked in advance. It is virtually impossible to fly into the islands.

We have been involved at the Department in a lengthy and protracted discussion about the conditions, whereby we would be able to enlarge the number of stopovers at Johnston Atoll to allow greater passenger flow from the islands to Hawaii and to onward destinations of the United States. I am here to report today, Mr. Chairman and other Members, that we, I think, have arrived at some responsible steps that the USI can take on the safety side to assure that we will be able to rapidly begin discussions with the Marshallese to increase the number of flights through and into Johnston Atoll.

I will just tell you that this has been awhile in coming. I want to commend publicly particularly the representative of the Marshallese government who have been relentless in their pursuit of their own national and legitimate interest in my view.

I hope to be able to begin discussions in the weeks ahead to be able to meet the increase in air service that inevitably comes in the May, June, and July time frame. We are a bit tardy in this, but it is better late than never, Mr. Chairman. With that I will conclude.

Mr. YOUNG. Thank you, Dr. Campbell.

[The prepared statement of Dr. Campbell follows:]

STATEMENT OF DR. KURT M. CAMPBELL, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR ASIAN AND PACIFIC AFFAIRS, INTERNATIONAL SECURITY AFFAIRS

Thank you Mr. Chairman. I am honored to join this distinguished assembly of Marshall Island and United States Government officials to discuss the status of nuclear claims, relocation and resettlement efforts of the governments of the four nuclear-affected atolls in the Marshall Islands. My responsibilities as Deputy Assistant Secretary of Defense for Asian and Pacific Affairs include the Freely Associated States, specifically the Republic of the Marshall Islands. While I have not visited the Marshall Islands, my staff has, and I have worked closely with the Republic of the Marshall Islands Embassy here in Washington.

**Background on the Defense Relationship**

The Department of Defense has a deep appreciation of the current significance and past history of our special relationship with the Freely Associated States; the Republic of the Marshall Islands, the Federated States of Micronesia, and Palau. We cannot, and should not, forget the price we paid in liberating these islands from Imperial Japan in World War II and the role some of the islands and peoples played in developing crucial U.S. defense programs in the 1950s and 1960s. Our relationship is founded upon the unique role of U.S. defense responsibilities to the sovereign nations of the Freely Associated States under the terms of the Compact of Free Association.

The Compact and subsequent agreements obligate the United States to provide for the defense of the Freely Associated States in perpetuity, unless mutually agreed upon to terminate the arrangement. We are committed to provide security to these nations and their peoples "as the United States and its citizens are defended." This level of defense commitment goes beyond any other U.S. treaty or alliance. In return for this fundamental security guarantee and other DOD obligations, we retain the right for certain military uses and access, as well as the right to veto access to third countries.

In the absence of the Compact or the Security and Defense Relations Title of the Compact, the Mutual Security Agreement still provides for defense obligations, military access, and denial of military access by third countries. Although it may appear that the termination of the Compact would result in little change, it is clearly in the best interests of the U.S. to maintain the full range of military access and security engagement options the Compact provides. One of the most important aspects of the Compact is the foundation it provides for our day-to-day working relationship with the people of the Freely Associated States.

In preparation for the upcoming Compact renewal negotiations, the Department of Defense has conducted a study to determine our defense interests in the Freely Associated States for the post-2001 era. This study, which will be finalized in mid-1999, has considered many issues of mutual concern, such as continued access, current and future threats, and roles the Freely Associated States may play in future scenarios.

The overriding defense interest in the negotiations will be continued use of the Kwajalein Missile Range and the facilities on Kwajalein Atoll. The requirements of our missile defense and space surveillance programs combined with the uniqueness of Kwajalein's location, infrastructure investment, and real world treaty restrictions, make this an issue of the highest priority.

Under the Military Use and Operating Rights Agreement, negotiated subsequent to the Compact, the United States retains the right to automatically extend the use of Kwajalein for an additional fifteen years to 2016. However, the Compact and use of Kwajalein are not that easily separated. While the agreements may be negotiated separately, proviso's of the Compact help provide the basis for the support of the

Marshallese, who in turn provide not only much of the labor force, but also a positive local environment which is critical for continued success at Kwajalein.

If the goal of the Compact is to maintain a unique relationship with the Freely Associated States while helping them become financially self-sustaining democracies, then a renegotiated Compact, in some form, is in the best interests of the United States and the Freely Associated States. It will help the Freely Associated States continue to work toward their national goals, while serving our national defense interests.

**Nuclear Claims, Relocation and Resettlement**

As part of the U.S. Government's acceptance of responsibility "for compensation owing to citizens of the Marshall Islands ... for loss or damage ... resulting from the nuclear testing program ... conducted ... between June 30, 1946, and August 18, 1958," the Department of Defense participated in the clean up of Enewetak Atoll. Contaminated matter was deposited in Cactus Crater on Runit Island and the Army Corps of Engineers constructed a concrete dome over the crater for containment.

Pursuant to the terms of the Compact of Free Association, the Republic of the Marshall Islands bears full responsibility for maintaining and monitoring the dome and Runit Island. Any issues dealing with Runit dome are best addressed to the Department of Energy for technical expertise.

The Department of Defense has cooperated with the Republic of the Marshall Islands' quest for historical data dealing with nuclear testing and clean up efforts. Most recently, in the fall of 1997, the Embassy of the Republic of the Marshall Islands was authorized to communicate directly with the Defense Special Weapons Agency as a means to refine requests for both classified and unclassified information. To date, this working relationship has not been utilized.

The Department of Defense bears no obligations for matters dealing with relocation or resettlement.

Mr. YOUNG. Dr. Seligman.

## STATEMENT OF PAUL J. SELIGMAN, M.D., M.P.H., DEPUTY ASSISTANT SECRETARY FOR HEALTH STUDIES, DEPARTMENT OF ENERGY

Dr. SELIGMAN. Thank you. Mr. Chairman, Members of the Subcommittee, I am pleased to be here today to discuss the Department of Energy's Marshall Islands program. My complete statement is provided to the Committee for the record.

As you know, this program was created in response to congressional direction to help the citizens and the leadership of the Republic of the Marshall Islands address environmental and medical consequences of the U.S. Atmospheric Nuclear Weapons Testing Program.

Our program currently consists of two parts, which I will discuss in turn. The Environmental Monitoring Program is focussed on helping the peoples of the four northern atolls, Bikini, Enewetak, Rongelap, and Utirik, understand how radiation has affected their environment; develop ways to mitigate contamination and monitor the effectiveness of these mitigation strategies especially in resettled communities.

In addition to the environmental program, we have a special medical care program that provides for the identification and treatment of radiogenic-related diseases in the peoples of Rongelap and Utirik atolls who are exposed from fallout from the Castle BRAVO test. The environmental monitoring program began in 1972, but since its inception has been conducted by the Lawrence Livermore National Laboratory.

The program is led by Dr. William Robison, who, I understand, is in the Marshall Islands today doing sampling and will not be part of the panel. This program has sponsored detailed environ-

mental monitoring and agriculture research to characterize the current radiologic conditions on those four northern atolls.

To date the U.S. Government has expended a total of more than $45 million towards this goal. Scientists have collected and analyzed more than 48,000 vegetation samples, 8,000 marine organism samples, 45,000 soil samples, in addition to numerous other animal, water, and aerosol samples.

Through this work we now have an accurate characterization and understanding of the nature and extent of radiation contamination in the northern belt atolls. The scientific data support a number of scientific and public health conclusions and recommendations regarding resettlement and land use in the northern atolls.

The primary conclusions are as follows: first, the Utirik people can continue to live on their atoll without concern that their health will be affected by radiologic exposure from residual contamination from weapons testing.

Second, the Rongelap people can also choose to resettle without concern that their health will be affected by radiologic exposure from residual contamination if they do two things: one, conduct a limited scrape of surface soils in the village areas; and, two, apply potassium fertilizers to areas where food is growing. This mitigation technique is called the combined option and is the basis for the Rongelap resettlement program being implemented today.

Third, the Bikini people may also choose to resettle without concern that their health would be affected by residual nuclear radiologic contamination if they, like Rongelap, apply the combined option.

Finally, the Enewetak people who have been resettled on the Enewetak atoll since 1980 can continue to live on their atoll without concern that their health will be affected by radiologic exposure.

Bioassay and whole-body counting results have independently confirmed this conclusion for the Enewetak people. We believe our studies have provided timely, relevant, and credible environmental data and have undergone extensive and independent national and international scientific peer review.

This work, together with independent environmental reviews supported by trust funds to the Department of Interior provide a firm foundation from which the Republic of the Marshall Islands government and their people can make informed decisions about resettlement and land use.

The environmental sampling and agriculture studies will be complete over the next two years. My office stands ready to address the needs, concerns, and questions of the RMI and local atoll governments regarding radiologic monitoring as circumstances evolve.

We recently signed a memorandum of understanding with Rongelap to support monitoring during current resettlement activities and stand ready to support similar activities on other atolls and islands as needed.

In conclusion, then, we think our environmental studies carried out over the years provide the solid information and firm foundation that the people of the government of the Marshall Islands

need to make informed decisions about how to resettle and use their lands.

I am not going to talk now because my time is limited about our medical program, but suffice to say that we have also through our medical program provided a program that is responsive to the needs of the community by providing preventative, innovative health care for the mandated population, enhancing delivery capabilities, involving the communities in the design of that program, and ensuring our new medical program is coordinated with other health agencies to leverage assets and improve overall health care service.

Mr. Chairman, I thank you for this opportunity to share the current status of our environmental program, and I would be pleased to answer any questions.

Mr. YOUNG. I thank the gentleman.

[The prepared statement of Dr. Seligman follows:]

STATEMENT OF DR. PAUL J. SELIGMAN, M.D., M.P.H., DEPUTY ASSISTANT SECRETARY FOR HEALTH STUDIES, U.S. DEPARTMENT OF ENERGY AND CAPTAIN, MEDICAL DIRECTOR, U.S. PUBLIC HEALTH SERVICE

Mr. Chairman and members of the Committee, I am pleased to be here to discuss the Department of Energy (DOE) Marshall Islands program. As you know, this program was designed and created in response to Congressional direction to help the citizens of the Republic of the Marshall Islands (RMI) with the environmental and medical consequences of the United States atmospheric nuclear weapons testing program. I also appreciate this opportunity to broaden the dialogue between the U.S. and the RMI so that we can better address needs of the local communities, consistent with our budget and within the framework of our mandate.

The atmospheric nuclear weapons test code-named "Castle BRAVO" was conducted at the Bikini atoll in 1954. The test inadvertently deposited radioactive fallout on 253 residents of the Rongelap and Utrik atolls. Medical care was provided for these individuals in the days immediately following the test by U.S. Navy physicians. When these physicians moved to Brookhaven National Laboratory (BNL) in 1956, the responsibility for caring for this group followed them. Medical care under the aegis of DOE and its predecessors continued through 1986 and the Congressional enactment of Public Law 99-239, Section 103(h) of the Compact of Free Association Act which mandated continuing this special medical program. Additionally, Public Laws 95-134 and 96-205 require environmental monitoring to characterize the radioactivity remaining at the four atolls of Bikini, Enewetak, Rongelap, and Utrik. These monitoring programs began in 1972-73 at Enewetak atoll and continue through the present.

Under these laws, DOE continues to provide two distinct services to the Republic of the Marshall Islands: environmental monitoring and special medical care. The environmental monitoring program is focused on helping the peoples of the Bikini, Eniwetok, Rongelap, and Utrik atolls understand the effect of radiation on their environment, develop methods to mitigate contamination, and monitor the effectiveness of mitigation strategies especially in resettled communities. The special medical care program provides for the identification and treatment of radiogenic-related diseases that have occurred in the peoples of Rongelap and Utrik atolls that were exposed to fallout from the Castle BRAVO weapons test.

**DOE Marshall Islands Environmental Monitoring Program**

For 27 years, the environmental monitoring program has been conducted for the DOE by its Lawrence Livermore National Laboratory (LLNL). The program has sponsored detailed environmental monitoring and agricultural research studies to characterize current radiological conditions at the Bikini, Eniwetok, Rongelap, and Utrik atolls. Since the inception of the program in 1972, the U.S. government has expended more than $45,000,000 toward this goal.

The program is led by Dr. William Robison, Scientific Director of the Marshall Islands Dose Assessment and Radioecology Program at Lawrence Livermore National Laboratory. I will defer to him today to describe the detailed scientific conclusions of his studies in the environmental area. But I would like to summarize the Department's views of his work.

Dr. Robison and his colleagues from Lawrence Livermore National Laboratory have assembled an unprecedented team of international scientific experts from around the globe to carry out this program. Since this work began, its expressed purpose has been to answer the difficult questions about radiation contamination in the Marshall Islands. This work has become the standard by which dose assessment and radioecology programs are measured today.

The environmental monitoring process conducted by LLNL consists of extensive field sample collection and laboratory analysis. To date, some 48,147 vegetation samples, 8,741 marine organism samples, 25,632 soil/sediment samples, 586 terrestrial animal samples, 1,373 water samples, and 61 aerosol samples have been collected and analyzed by LLNL. Also, agricultural research studies centered on Bikini Island have provided important insight into possible mitigation strategies that will help reduce the uptake of radionuclides in locally grown food products.

**Key Scientific Findings**

Through the work of Dr. Robison and his team, we now have an accurate characterization and understanding of the nature and extent of radiation contamination in the northern belt atolls of Bikini, Eniwetok, Rongelap, and Utrik. Dr. Robison's work, while not yet complete in several key areas, has produced scientific data that support a number of conclusions and recommendations. I emphasize to the Committee that these recommendations are based solely on the scientific data, and do not consider other factors that will ultimately affect decisions of the Marshallese peoples.

- The *Utrik* people can choose to live on their atoll without concern that their health will be affected by radiological exposure. A final environmental report for Utrik is scheduled for publication in July 1999.
- The *Rongelap* people could choose to resettle without concern that their health will be affected by radiological exposure if they (1) conducted a limited scrape of surface soils in the village areas and (2) apply potassium fertilizer to areas where food is growing. This mitigation technique, referred to as the combined option, is the basis for the resettlement program being implemented at Rongelap today. We have recently entered into a Memorandum of Understanding with the Rongelap leadership to provide radiological monitoring of the ongoing resettlement activities.
- The *Bikini* people could choose to resettle without concern that their health will be affected by radiological exposure if they, like the Rongelap, (1) scrape the village areas and (2) apply potassium fertilizer to food growing areas.
- The *Enewetak* people have been resettled on Enewetak atoll since 1980. Bioassay and whole body counting results have confirmed that radiation doses on Eniwetok Island, where resettlement has occurred, are at or near world background levels and present no health consequences to the population. If the Enewetak people decide to resettle Enjebi Island, DOE recommends using the combined option as at Rongelap and Bikini atolls for mitigation.

**Credibility of the Science**

Since the beginning of the LLNL program, the scientific resultant studies have undergone extensive independent scientific peer review.

In the mid-1980s, Public Law 97-257 (House Report 90-450) directed that the Office of Territorial and International Affairs, U.S. Department of the Interior establish the Bikini Atoll Rehabilitation Committee (BARC). The BARC was to work with the Bikini people to determine the feasibility and estimated cost of cleanup of Bikini Atoll. An interim report was issued on November 23, 1983 which was followed by their March 31, 1986 report. Copies of both reports will be provided for the record.

- From 1992-1994, DOE funded a study by the National Research Council of the National Academy of Science to evaluate the appropriateness of analytical techniques, ingestion and inhalation models, and proposed remedial actions to support resettlement of the Rongelap atoll. A copy of their report, entitled *Radiological Assessments for Resettlement of Rongelap in the Republic of the Marshall Islands,* is provided for the record.
- In 1994, the Rongelap local government asked a distinguished international panel of experts (known as the Scientific Management Team) to determine compliance with agreed limits for total annual dose-rate on Rongelap Island and actinide contamination of soils on Rongelap islands and neighboring islands. Their report, entitled *Summary of First Phase,* is provided for the record.
- In response to U.S. Congressional hearings in 1989 and 1990, a committee of renowned scientists, chaired by Henry I. Kohn, Ph.D., was convened to provide insight and recommendations on potential resettlement of Rongelap atoll. Data from LLNL's environmental monitoring program was reviewed and became the

basis for the committee's findings. A copy of their report, entitled *Rongelap Reassessment Project Report,* is provided for the record.

• In 1995, the International Atomic Energy Agency (IAEA) established an IAEA Advisory Group to provide independent review of Bikini atoll environmental data generated by LLNL. The Advisory Group, convened at the request of Bikini Senator Henchi Balos, examined proposed actions to enable Bikini resettlement. A copy of their report, entitled *Radiological Conditions at Bikini Atoll: Prospects for Resettlement,* is provided for the record.

• Since 1995, Dr. Hertwig Paretzke, Director of the Institute for Radiation Protection, Neuherberg, Germany, has consulted with the Bikini people and Dr. Robison to help the people of Bikini better understand the facts about residual radioactivity in the environment and in the foods at Bikini. They have explored numerous options that might best serve resettlement of Bikini.

I believe that Lawrence Livermore's work has provided timely, relevant, and credible environmental data. Environmental data from Lawrence Livermore's work, together with the independent environmental reviews made possible by trust funds provided through the Department of the Interior, provides a firm foundation from which the Republic of the Marshall Islands government and their people can make informed decisions about resettlement and land use.

As DOE completes the bulk of the environmental sampling and agricultural studies over the next two years, we will continue to consult with the RMI and the local atoll governments. We will continue our record of being responsive to their questions, concerns, and needs, and hope to continue our part in answering scientific questions about radiological contamination in the Marshall Islands environment.

**The DOE Marshall Islands Special Medical Care Program**

In addition to the environmental monitoring program, the Department funds a special medical care program in response to Congressional direction. This program provides treatment for radiogenic-related diseases for the group of people in the Rongelap and Utrik atolls who were exposed to fallout from the Castle BRAVO weapons test. Public Law 99-239 defines the program as follows:

> *. . . the President (either through an appropriate department or agency of the United States or by contract with a United States firm) shall continue to provide special medical care and logistical support thereto to the remaining 174 members of the population of Rongelap and Utrik who were exposed to radiation resulting from the 1954 United States thermonuclear 'BRAVO' test, pursuant to Public Laws 95-134 and 96-205. Such medical care and its accompanying logistical support shall total $22,5000,000 over the first 11 years of the Compact.*

The program's primary objective is to provide

Of the 253 individuals originally exposed to fallout from Castle BRAVO, 130 individuals remain. In addition, 109 individuals who were residents of the affected atolls but were not directly exposed to the BRAVO fallout (being elsewhere at the time of the test) are included in the program. Today, 239 people are covered by DOE's special medical care program.

**Key Program Strategies**

Until June 1998 and for the previous 44 years, medical care has been provided to the Rongelap and Utrik beneficiaries of the program by a team of U.S. doctors led by Brookhaven National Laboratory (BNL). The BNL team visited the Marshall Islands semiannually for medical missions lasting four to six weeks. While beneficial, it provided only intermittent medical care to the mandated patients and had limited prospects of making sustained contributions to either their health or public health in general.

Beginning in 1996, DOE, the RMI government, and the local governments of the Rongelap and Utrik atolls began a process to design a new medical care program that would be more responsive to the needs of the beneficiaries. Representatives from each group were involved at each critical juncture of the process, including the design of the new program, development of the Request for Applications, and review of the applications.

This effort led to a new program, implemented in August 1998, that is run by the Pacific Health Research Institute (PHRI) in Honolulu. This multi-faceted program has a number of first year strategies and goals that include:

• Providing preventative and innovative healthcare for the mandated population to improve their health status,
• Enhanced continuity in the delivery of healthcare;
• Establishment of a community advisory process for the program;
• Delivery of healthcare in a culturally appropriate manner;

• Coordination with other health agencies in the RMI to leverage assets and improve overall service

PHRI clinics are located on Kwajalein Island and in Majuro. Local Marshallese physicians and nurse supervisory personnel can see patients daily. Complementing the Marshallese physicians and nurses are a number of U.S. trained physicians working with Straub Clinic and Hospital, Kaiser-Permanente, Wahiawa General Hospital, and the University of Hawaii John A. Burns School of Medicine. These individuals rotate through the clinics once a month for a two-week period, and assist the Marshallese physicians in providing both primary and specialty care to the mandated population. PHRI also uses senior family practice residents on monthly rotations from the University of Hawaii John A. Burns School of Medicine's Department of Family Practice and Community Health for additional support and assistance.

Even though the new DOE/PHRI medical care program is still taking root, we feel that it strengthens our ability to carry out the Congressional mandate and holds great promise to build a Marshallese health care program with potential for long-term self reliance.

**Public Involvement/Openness**

DOE has committed itself to be responsive to the questions, concerns, and needs of the Marshall Islands people. DOE has worked toward this goal by actively listening to the central and local governments and their communities, effectively giving them a voice in determining the future direction of the Marshall Islands program. DOE routinely publishes the results of its scientific environmental work in the public domain. DOE is also well underway in honoring its pledge to disclose all DOE controlled information and documents related to the nuclear weapons testing in the South Pacific previously unavailable to the public. Examples of DOE's actions in these regards follow:

• DOE maintains a full time presence in Honolulu whose express purpose is to provide day-to-day operations interface with the RMI and local atoll government representatives in the U.S. Embassy in Majuro, M.I.

• Since 1990, DOE has engaged the local leadership and community members from Bikini, Eniwetok, Rongelap and Utrik in over 30 community meetings to discuss the results of scientific reports as they were completed. During one such meeting, community representatives expressed their confusion and displeasure over DOE's historical use of the term "exposed" when referring to persons other than the mandated population served by the special medical care program. In consultation with the concerned parties, DOE responded in November 1998 with a letter clarifying its use of the term "exposed" as it appears on section 103 (h) of the Compact of Free Association.

• Since 1993, DOE has hosted an annual meeting between the Department, the RMI central government, and government representatives from Bikini, Eniwetok, Rongelap and Utrik to discuss program strengths and weaknesses and needed corrective actions. For example, at the 1994 annual meeting, the Eniwetok local government requested assistance conducting a radiological survey of Runit dome. DOE conducted the requested survey and presented the results to the Eniwetok representatives. These results were subsequently published in the July 1997 special Marshall Islands edition of the *Health Physics Journal.*

• In October 1998, DOE and representatives from the RMI Government and the Bikini, Eniwetok, Rongelap and Utrik atolls, agreed on an action plan to assist the four communities in their current or future resettlement plans. Coming from that meeting was the framework for the Rongelap/RMI/DOE Environmental Monitoring Memorandum of Understanding, now agreed to and being implemented by the parties to assist in Rongelap resettlement activities.

• To date, LLNL has published 37 scientifically peer-reviewed reports providing scientific information and conclusions on the radiological environment at the Bikini, Eniwetok, Rongelap and Utrik atolls. Each report was provided to the RMI Government and to each of the affected atoll communities. Copies are available for the record.

• In 1997, DOE sponsored a special edition of the Health Physics Journal, entitled *Consequences of Nuclear Testing in the Marshall Islands.* This publication, a compendium of peer-reviewed articles by scientists from around the world who have worked in the Marshall Islands, is the first comprehensive collection of environmental and medical-related information related to the Marshall Islands saga.

• In 1996, DOE implemented an aggressive program to make available, through the Department's website, more than 1,000,000 document pages concerning nuclear weapons testing in the South Pacific. This electronic medium permits direct access by the RMI and the public to this important information.

• In 1997, DOE provided a two-year, $45,000 grant to the RMI Embassy in Washington to enable Marshallese personnel to access data electronically on the internet and to access and use the DOE/Department of Defense Center for Coordination and Information in Las Vegas, Nevada.

Over the past five years, DOE has provided in hard copy to both the RMI Embassy in Washington, D.C. and through the American Embassy in Majuro to the RMI Minister of Foreign Affairs and Trade, 77 boxes of documents relating to the nuclear testing era.

**Conclusions**

DOE believes that LLNL's work is providing timely, relevant, and credible environmental data. This information, together with the independent environmental reviews made possible by resettlement trust funds provided through the Department of the Interior and the Nationwide Radiologic Survey conducted independently by the Marshall Islands Nuclear Claims Tribunal, provides a firm foundation from which the Republic of the Marshall Islands government and their people can make informed decisions about resettlement and land use. As DOE completes the bulk of the environmental sampling and agricultural studies over the next two years, we will continue to consult with the RMI and the local atoll governments. We will continue to be responsive to their questions, concerns, and needs, and to maintain a presence in the Marshall Islands as long as we can contribute to addressing scientific questions about radiological contamination in the Marshall Islands environment.

Similarly, DOE's new special medical care program begun last year is breathing renewed life into the healthcare system by providing preventative and innovative healthcare for the mandated population, enhancing healthcare delivery capability, involving the communities, and coordinating with other health agencies to leverage assets and improve overall healthcare service. Even though the new DOE/PHRI medical care program is still taking root, it has already shown that it holds great promise to build a Marshallese health care program with potential for long-term self reliance.

DOE's Office of Environment, Safety and Health has administered the Marshall Islands Medical Program since 1990. Our office is unique within the Department because its staff includes experts in radiation safety and public health. We have worked hard to carry out a successful and responsive Marshall slands environmental and medical care program while balancing our concerns for program efficiency and effectiveness.

Mr. Chairman, I thank you for this opportunity to share the current status and progress of our environmental and medical care programs in the Marshall Islands. I would be pleased to answer any questions.

Mr. YOUNG. I want to thank the panel. Mr. Boyce, you stated, or indicated, the State Department will establish an office for the special negotiator. When will that begin, and how long do you expect that to be in existence, and where it will be housed?

Mr. BOYCE. We will have it up and open on June 7, Mr. Chairman. As I mentioned, my colleague, Al Stayman, will be the special negotiator to be heading up that shop. We expect that we will have ten professional staff drawn from the interagency working group, and the offices will be physically in the Department of State.

And as far as how long we expect the office to be up, that really is going to depend on how the renegotiation goes; but with Al at the helm, I anticipate that should be a speedy and efficient process.

Mr. YOUNG. Talking about negotiations, isn't that going to put an imposition upon the Marshallese as far as distances, or are they going to have to—how is that going to be handled?

The gentleman from the Defense Department talked about the new air traffic. Is that going to take care of that problem? We are trying to negotiate from a position period of the State Department. I guess, in the first place, I can't quite figure out what we are negotiating yet and what position the administration will have in this whole program.

It is going to be an awful big imposition, I think, for the people and the government of the Marshall Islands to be flying back and forth to Washington, DC. Or will there be a head-hunter doing the work for them?

Mr. STAYMAN. Mr. Chairman, as a matter of fact, we also had some informal discussions. We weren't really anticipating a lot of meetings in DC or in the Marshall Islands. Perhaps we could—Hawaii or the West Coast where it would be mutually convenient and inconvenient and share that burden.

Mr. YOUNG. Okay. Doctor, on the health end of it, other than the nuclear, are you studying other aspects of the health challenges and the results of some of our relocation and diets that have occurred in the Marshall Islands?

Dr. SELIGMAN. No, we have not.

Mr. YOUNG. Are there other agencies within our government helping the Marshallese in this endeavor?

Dr. SELIGMAN. Mr. Stayman, do you know the answer to that question?

Mr. STAYMAN. Not to my knowledge.

Mr. YOUNG. Does anybody else want to address that issue? There are some health problems that have occurred especially, I believe, on Enewetak and other areas because of the change in diets. Is that a correct statement?

Mr. STAYMAN. Yes. I could make a brief comment. One of the things that we are seeing in the expansion of the radiological health care programs, we believe, is a reaction to the generally poor health care available to the general public; that there is certainly political pressure and pressure personally to get enrolled in these medical programs. In fact, there are general public health problems mainly associated with diet.

Mr. YOUNG. I have been out there twice now. I think the thing that sort of bothers me the most is the relocation and the imposition upon these people was the result of our testing 64 times nuclear capability.

Now, a change in the wind was something that was unforeseen. Like bombing the Chinese embassy, we used old maps. I had to bring that up. But I want the administration and the State Department and everybody involved, because this is a crucial area, to understand that the problems this small group of people are faced with were basically created by ourselves.

The relocation itself—and now we are talking about they can go back and live on the island safely, et cetera, et cetera. But unless we help provide things that they have become used to, they are not going to relocate. That is something that is a natural thing.

Electricity is crucially important. The ability to have TV is crucially important. Things that people become used to are just not going to pick up and go back as we think they ought to go back to the way they were prior to the testing. I think that is part of our responsibility.

We started this mess under the guise of defending ourselves, and I think that we have the responsibility to do everything possible to make sure that we encourage, through additional attractive medical care, electricity capabilities and those type things. Otherwise

you are going to have the same problem they are faced with right now.

Mr. Boyce? I see you nodding your head.

Mr. BOYCE. I concur. In fact, I think that you asked earlier that you were not quite sure what we were going to be negotiating or renegotiating. I think the original intent of the compact was not just to provide for the defense of the islands and keep the status quo going on forever.

It was also to provide a substantial transfer of resources to provide for the economic development and hopefully the self-sufficiency of the islands. As we go into the renegotiation, obviously we are going to be taking a good close look at the $3 billion that has been spent over the 12 years so far, how much of that was spent intelligently and how much needs to be redirected.

Some of the comments you made about providing the kind of infrastructure and facilities that will be conducive to going back will be considerations in all of this as well. I very much take your point.

Mr. YOUNG. My time is up. Mr. Miller.

Dr. SELIGMAN. I just wanted to make a comment, Mr. Chairman. I agree with you, Mr. Chairman. I believe strongly that the public health and medical problems and needs of the Marshall Islands go well beyond those that my office has focussed on in a fairly limited fashion which are those related to radiologic exposure.

I think you are right on the mark. There are bigger public health and medical needs and problems that should be and need to be focussed on in the Marshall Islands that we have not, to date, focussed on.

Mr. YOUNG. Thank you, Doctor. Mr. Miller.

Mr. MILLER. Thank you, Mr. Chairman. I might just follow up on that point. I was going to start the other way—let me follow up on that point. Dr. Seligman, you state really without qualification on page 2 of your statement that resettlement or choosing to live on these various atolls can be accomplished without concern for their health.

I don't want to put words in your mouth, but that is essentially what you are saying there. You go on to say that you are—I don't want to use the word comfortable, but with the peer review that these studies—the conclusion of these studies have drawn and the peer review of those studies. Is that accurate?

Dr. SELIGMAN. That is correct. Without concern that their health will be adversely impacted by radiologic exposure.

Mr. MILLER. From time to time I believe it's been raised with us, I know; but I don't know if it has been raised with you. There was some concern, I think people had a lot of confidence in Dr. Robison and the people of Lawrence Lab.

In the collection of data, there was some question of whether or not the people of the Marshall Islands and leaders and others were comfortable with the analysis of that. But that has all been—they may raise that point when they come up. Do you know if that is a controversy still? Is that still an area of concern?

Dr. SELIGMAN. The environmental data have been peer-reviewed by the International Atomic Energy Agency, the National Academy of Sciences and others. To my way of looking at it, I think the data are credible, that there is——

Mr. MILLER. Let me ask you this. That is what your statement says. But whatever controversy there has been over the analysis of that data, has that been put to rest or does that continue, from what you know?

Dr. SELIGMAN. To be honest, I am not sure what the controversy is regarding the analysis of the data.

Mr. MILLER. Let me ask you—and maybe the other panel can raise the issue—but let me ask you in the context. As far as your testimony is concerned, all of the analysis has been subjected, on which you base these conclusions, has been subjected to what you consider high-quality critical peer review. Is that accurate?

Dr. SELIGMAN. That is correct.

Mr. MILLER. I think the other panelists may raise some questions about that. One last point. There was some suggestion that they wanted yet another independent analysis of this data. Where would you go that would be different than where it has been subjected to peer review? How would that be accomplished if that was to come about?

Dr. SELIGMAN. I think there are numerous experts nationally and internationally that the Marshallese could turn to to get advice. I think you will have people on subsequent panels that they have already turned to to get such advice. I think that is——

Mr. MILLER. Okay. All right. Now, having gone through a base closure, you are now sensitive to the idea of what is clean. The people paying for it think one threshold and the people getting it are thinking of another threshold generating these base closures.

Are we using the same standards in terms of cleanup of this facility as we are for nuclear weapons development sites? Is this a different standard out there, or is this the same standard that we would use in the United States?

Dr. SELIGMAN. There are, as I am sure that you are aware, multiple standards out there. There is an EPA standard; there is an NRC standard; there is a standard that we have used previously, the IAEA. Our role, essentially, is to conduct the environmental sampling and monitoring, to provide those data to the Marshallese, and to let them make a determination as to what standard they would like to use in making decisions——

Mr. MILLER. Is that being done in compliance with the EPA standard or the DOE's?

Dr. SELIGMAN. The Department of Energy doesn't have a standard. There are other agencies that have standards.

Mr. MILLER. We are learning about a lot of the activities, but we will let that go, too.

Dr. SELIGMAN. Sure. Are you implying that the Department of Energy should have——

Mr. MILLER. I want to know when we talk, when we collect the data and we do the analysis, are we comparing or subjecting the environment of the Marshallese to the same standard that we would expect our constituents in the continental United States to be subjected to?

Dr. SELIGMAN. Again, my office doesn't subject the data to a particular standard. We simply describe——

Mr. MILLER. Would one of the other panelists tell us? If we decided the people in my congressional district have to live within

EPA standard or DOE standards, have we made that same determination about the people in the Marshall Islands?

Mr. YOUNG. Nobody is saying.

Dr. SELIGMAN. I think the Marshallese are fair to use whatever standard they wish.

Mr. MILLER. No. It is not about what standards they use. It is about when you draw the conclusion, and you are taking Rongelap and Bikini and Enewetak and elsewhere; and you draw these conclusions—I'm asking you based upon what standard was used as to what is clean and what is healthy environment—is it the same standard that would be used for my constituents or is it a different standard? It is not what the Marshallese chose. You are giving them advice based upon Dr. Robison's work; is that not correct?

Dr. SELIGMAN. Based upon what we know of the health impacts of radiologic contamination, that is correct.

Mr. MILLER. So now I am only asking is what you know based upon this—is this based upon standards that we as Members of Congress would expect if we were under an EPA cleanup or DOE cleanup? Are they the same?

Dr. SELIGMAN. Or an NIC cleanup? IAEA? I'm not exactly sure which standard you are applying.

Mr. MILLER. You know exactly what I'm saying. I am asking you whether or not those standards are the same when they are used in the cleanup in congressional districts in the States. If we use the standards of IAEA or if we use the standards of DOE or if we use the standards of the NRC, are those the same standards that are being used there? Is it simple now?

Dr. SELIGMAN. The same standards upon which I used to evaluate our data, yes.

Mr. MILLER. They are the same. That is what I have been asking you for 5 minutes. Are they parallel standards and are they the same? The suggestion has been that, in fact, they are not. The higher dosages have been accepted, the higher millirems of residual have been accepted than the standards that we would use in a similar situation in the United States. That is not accurate?

Dr. SELIGMAN. Of course not.

Mr. MILLER. Okay. Thank you.

Mr. YOUNG. The gentleman from California, Mr. Doolittle. You don't have to ask any questions if you don't want to.

Mr. DOOLITTLE. I will pass.

Mr. YOUNG. The gentleman from American Samoa.

Mr. FALEOMAVAEGA. Thank you, Mr. Chairman. Mr. Chairman, I ask for unanimous consent that my statement be made part of the record.

Mr. YOUNG. Without objection so ordered. That is automatic for everybody, so your statements are made——

**STATEMENT OF HON. ENI F.H. FALEOMAVAEGA, A REPRESENTATIVE IN CONGRESS FROM AMERICAN SAMOA**

Mr. FALEOMAVAEGA. Mr. Chairman, I also want to commend you for taking a bipartisan congressional delegation recently to visit the Republic of the Marshall Islands. I think it was a very important lesson for the Members of this Committee to see firsthand what we have been trying to deliberate upon and, hopefully, to provide some

kind of resolution for this very serious problem affecting the health needs of the people of the Marshall Islands.

I want to thank Mr. Boyce for his statement, certainly members of the panel, and wish to convey my best regards to Assistant Secretary Stanley Roth and Secretary Boyce for moving ahead with the negotiations of the Marshall Islands and I'm very pleased that our good friend, Mr. Stayman, has now taken the helm of this important matter to discuss and to negotiate with the Marshall Islands and the compact.

[The prepared statement of Mr. Faleomavaega follows:]

STATEMENT OF HON. ENI F.H. FALEOMAVAEGA, A DELEGATE IN CONGRESS FROM THE TERRITORY OF AMERICAN SAMOA

Thank you very much for calling this hearing to review the longterm effects of America's nuclear testing legacy on our close friends and longtime allies, the good people of the Republic of the Marshall Islands. Our great Nations owes an immense debt to the Marshallese people for their tremendous sacrifices that directly contributed to, and continues to contribute to, America's nuclear deterrent and ballistic missile defense.

Today, Mr. Chairman, under your guidance, we examine the status of the nuclear claims by our Marshallese friends, and the uprooting, relocation and resettlement of their families and villages between the atolls and islands of the Republic of the Marshall Islands.

In support of these crucial efforts, Mr. Chairman, I thank you deeply for recently leading a Congressional Delegation to see first-hand the unresolved problems caused by America's nuclear weapons testing program conducted over many years in the Marshall Islands.

For those of us who have been working on this issue for quite some time, we know the seriousness and extent of the problems, but there just has never been enough attention brought to the problem to get it adequately addressed.

Mr. Chairman, the actions of the United States Government have caused the people of the Republic of the Marshall Islands immense harm which continues to this day. With tens of atmospheric tests of atomic and thermo-nuclear weapons, we have made uninhabitable due to nuclear radiation much of these people's homelands. We have disrupted their lives by removing them from their homelands and in some cases they have yet to return out of fear for their physical safety should they return.

With the recent declassification by the Department of Energy of previously classified documents, we now know that the U.S. Government hasn't always been candid and forthright with the people of the Marshall Islands. Because of what some would consider callous disregard, and perhaps duplicity, for the well-being of the residents of the Marshall Islands, they no longer trust our government to do the right thing by them. After a preliminary review of the facts, I can understand why our Marshallese friends feel this way.

Throughout this time, the United States Congress has provided the Marshalles people their only hope for a just settlement, and they are again looking to the Congress to provide proper oversight of the efforts within the Departments of the Interior, Energy and State to make their homelands safe, allowing them to return to their native lands.

Mr. Chairman, this whole process has taken much too long and in this time of expected U.S. budget surpluses from which the House of Representatives has ad hoc allocated $12.9 billion dollars for Kosovo and defense concerns—we really have no excuse for not addressing these serious problems which we have caused with the good people of the Marshall Islands.

Mr. FALEOMAVAEGA. I want to ask Dr. Seligman as a follow-up of what the gentleman from California was trying to raise here. Dr. Seligman, am I pronouncing your name correctly? I have the same problem with my name.

Dr. SELIGMAN. Seligman. Thank you.

Mr. FALEOMAVAEGA. If I were exposed—if I know for a fact that I was exposed seriously to nuclear contamination, let us say even to this day, and I want the best doctors and the best hospital in the world to take care of me, where would I go? For a full examina-

tion, high tech, the best experts that I could find in the world to make sure that they know what the hell they are talking about as far as my health is concerned if I have been exposed to nuclear contamination.

Dr. SELIGMAN. I don't think in my mind there is one place that I would necessarily have you go to. I think there are many centers and many experts within the United States that would satisfy that.

Mr. FALEOMAVAEGA. I am leading up to that question, Dr. Seligman. You mentioned that Dr. Robison is currently conducting a comprehensive environmental and agricultural sampling, soils and all of that. His report will not be available—within two years maybe it will be completed?

Dr. SELIGMAN. Our work at Bikini will be completed in two years.

Mr. FALEOMAVAEGA. My question, Dr. Seligman, is we are doing so much about the substance of the soils, the environment of the islands, but what are we doing with the people? Are you aware of the fact, sir, that the people in Utirik are the most contaminated people that were exposed to a nuclear testing as a result of the series of the Castle detonations that we did in the 1950s?

Dr. SELIGMAN. I don't believe that to be correct, sir.

Mr. FALEOMAVAEGA. Then correct me.

Dr. SELIGMAN. I don't think they were the most heavily exposed. I think the people who were closer in Rongelap were more heavily exposed than those in Utirik.

Mr. FALEOMAVAEGA. How far is Utirik from Rongelap?

Dr. SELIGMAN. I would have to rely on some other experts, but I believe it is two to three hundred miles.

Mr. FALEOMAVAEGA. How far is Utirik from the nuclear testing of the BRAVO test that was conducted in 1954?

Dr. SELIGMAN. Again, I believe it is a similar distance.

Mr. FALEOMAVAEGA. Were you aware of the fact that after the nuclear testing the people of Utirik were taken back again to their islands to live there as a difference to the fact that the people of Rongelap were taken off of their islands when this BRAVO test had taken place?

Dr. SELIGMAN. I am not particularly familiar with that information, no.

Mr. FALEOMAVAEGA. I would like to ask, Dr. Seligman, what is the Department of Energy doing in finding some way to comprehensively examine the health needs of these, people especially those that have been exposed to the testing since the 1950s?

Dr. SELIGMAN. We do have a Marshall Islands medical program that has been in existence since 1954 that does provide medical care and examinations for those who were exposed to Rongelap and Utirik. That program is still ongoing.

Mr. FALEOMAVAEGA. Sir, that doesn't help me, Dr. Seligman. I am very, very concerned that we have been doing a lot of flip-flops about providing the best medical health care needs for these people.

That is the reason why I asked in my previous question, my first question, if I were to take 600 people exposed to nuclear testing, as a result of our nuclear testing program, where can I go to take these people to be fully examined to see if they don't have thyroid

cancer, leukemia, and all of these other after effects that has happened to these people since we bombed these islands in the 19950s? Where would I go today to get more conclusive evidence as to their status? Don't you think that maybe the Japanese might have better medical care for people who have been exposed to nuclear testings?

Dr. SELIGMAN. You are asking me about the Japanese medical care system? I am not in a position to reply to that.

Mr. FALEOMAVAEGA. Mr. Chairman, my time is up. I am sorry I will have to pass for the next round.

Mr. YOUNG. All right. Mr. Udall. I take that back. Mr. Gibbons.

Mr. GIBBONS. No questions.

Mr. YOUNG. Mr. Udall. Either one.

Mr. TOM UDALL. I would like to yield to the gentleman.

Mr. FALEOMAVAEGA. Thank you very much. I thank the gentleman for yielding.

Dr. Seligman, we are just trying to be helpful. If I could ask all of the members of the panel, would you agree as a consensus that now due to recently exposed evidence of facts and materials that have been declassified from the Department of Energy that there were more people in the Marshalls that were exposed to nuclear contamination than were thought of maybe since the 1950s?

Would you agree that due to the evidence that has now been declassified that more people in the Marshalls have been exposed to nuclear contamination than were thought of as there was before in the 1950s?

Mr. STAYMAN. What the new information allows us to do is to quantify better the level of contamination. It is fair to say that we have a better idea statistically of what the exact amounts of radiation were. I believe that is a fair statement.

Dr. SELIGMAN. I don't think there is any question in terms of the number of people that were exposed. Not only were the people of the Marshallese exposed, but the fallout from the atmospheric testing went worldwide. I would agree with Mr. Stayman. It has nothing to do with the numbers of individuals, but actually the quantity of exposure.

Mr. FALEOMAVAEGA. It has nothing to do with the number of individuals as it is to the quantity of exposure?

Dr. SELIGMAN. Right. The number of individuals who were exposed back then is the same then that we are aware now.

Mr. FALEOMAVAEGA. There were 150 people in Utirik atoll that were brought back to their island after the BRAVO test. Utirik atoll is approximately the same distance, 100 miles, as was Rongelap.

For the benefit of my colleagues, the BRAVO test was the first thermonuclear hydrogen bomb that our country exploded in the Marshalls for which hours before our officials knew that the winds had shifted.

And before doing so, we went ahead and exploded this hydrogen bomb which is 15 megatons, 1,000 times more powerful than the nuclear bombs we dropped in Hiroshima and Nagasaki, just to give the benefit of my friends here the extent of how serious this problem was.

And it wasn't just a BRAVO test. It was also the Yankee test, others, well over 10,000 megatons. So my question here is 150 peo-

ple were brought back to their atoll; they have lived there. Now, there are about 500 or 600 of them. My question is what is our government doing to provide the best medical attention to these people?

I'm simply asking, Dr. Seligman, do we have a process that if I were exposed to nuclear contamination can I go to Tripler? Can I go to Stanford? Where do I go to get me the best medical knowledge of what is happening to me due to nuclear contamination?

Mr. STAYMAN. Let me just interrupt a second because I think there is a misunderstanding which we need to clarify. Rongelap and Utrik are down wind of Bikini, where BRAVO occurred. Utrik is about twice as far. I just want to make sure there is an understanding there.

Dr. SELIGMAN. I would be happy to get that information for you as to where you could go to get the best possible care. I am proud of the program that we have provided for the Marshallese in terms of medical monitoring for those that were included in that group of citizens from Rongelap and Utirik who were exposed most heavily to fallout from Castle BRAVO. We changed medical contractors in 1998. We have a new program in place.

Mr. FALEOMAVAEGA. Dr. Seligman, if I may, my time—I am sorry, but we had a hearing in 1994. There were disagreements even among the scientists who were contracted to go there and conduct these soil samples as it was in terms of the exposure that these people were subjected to. You are telling me that you are satisfied with the way that we have been doing these examinations?

Dr. SELIGMAN. The soil samples, yes. I am satisfied.

Mr. FALEOMAVAEGA. What about the examinations of the people?

Dr. SELIGMAN. For our program, yes, I have been satisfied.

Mr. STAYMAN. If I could also jump in here, again, Mr. Congressman. There may be a bit of confusion about who the eligible people are for which program. Dr. Seligman is talking about the DOE program, which treats those who were directly exposed, not people who moved back.

As you point out under the terms of the Compact, there was a program specifically extended, known as the so-called Four-Atoll Program. The Compact provides $2 million a year for that program.

Just as a point of clarification. I think that everyone would agree—and you raise very good point—it is not considered to be a very high-quality program, in part, because of the inflation of the enrollment. But clearly it is woefully underfunded to meet the need that you pointed out. That is certainly one of the things that we are going to have to look at very closely in the renegotiation.

Mr. FALEOMAVAEGA. Mr. Stayman, would you look at the Department of Energy also as a resource that could be helpful to resolve this problem, other than just doing soil samplings and testings of the environment?

Mr. STAYMAN. Yes.

Mr. FALEOMAVAEGA. I would appreciate if the DOE could also be helpful in finding out the status of the health conditions of these people who were exposed to the contamination.

Mr. YOUNG. I thank the gentleman. The gentleman from Guam.

**STATEMENT OF HON. ROBERT A UNDERWOOD, A DELEGATE IN CONGRESS FROM GUAM**

Mr. UNDERWOOD. Thank you, Mr. Chairman. I too want to thank you for holding this hearing. I guess we are at some level of discomfort, at least I am, in terms of the responses by the Department of Energy on this very serious issue.

One is I want to characterize and hopefully people understand that it seems to me that the Department of Energy is concerned about the level of responsibility and the programmatic responsibility and liability; and the people of the Marshalls, of course, are being asked to accept at face value some of the statements that are being made and not necessarily concerned about the programmatic liability, but are actually concerned about their lives.

When you make that kind of a comparison, it lends to a great deal of discomfort and uneasiness and anxiety. What we have here is I would consider a real crisis in terms of how much confidence there is in some of the statements that are coming out of the Department of Energy.

It seems to me the way to resolve that is to in some instances to call for more independent assessment or to have some independent assessment going into it. Now, I have talked to a lot of people, in particular the people that Mr. Faleomavaega were referring to in terms of some of the people of Utirik, some who were not directly exposed to it at the time of the blast but have been living there ever since.

It seems to me that they have—that they should come under the same kind of program as those that were directly exposed to the blast, inasmuch as the people who were not evacuated to the same extent that the others were.

I think what Mr. Miller was trying to get at was the issue of the standards is that at that time in the 50s in Utirik we are talking about 24,000 millirems of exposure to radioactivity. In the 1990s we are still talking about 18. I think the EPA standard is 15 millirems.

We are trying—I am trying to understand what exactly is the standard you are using, and is there any objection from the Department of Energy to independent risk assessment for the people of these four affected atolls in terms of their health?

[The information follows:]

Dr. SELIGMAN. We would encourage that assessment.

Mr. UNDERWOOD. And you will be willing to participate in that independent risk——

Dr. SELIGMAN. I don't know how we would participate in an independent one, other than opening up our files and making sure that all of the data that we have are available for anyone to look at at any time.

Mr. UNDERWOOD. I get a different story sometimes from representatives of the Marshalls. I get the feeling that there has not been full disclosure by the Department regarding radiation exposure.

Dr. SELIGMAN. We have provided 77 boxes, millions of pages of materials to the Marshallese. If there are still materials that have not been made available or still classified, we would like to know about them and we will work to see that they are declassified.

Mr. UNDERWOOD. So this is a full commitment of the Department of Energy to open up their files for this purpose?

Dr. SELIGMAN. Absolutely.

Mr. UNDERWOOD. On the issue, Dr. Campbell, I know that this is not directly pertinent to the work here, but you mentioned the role of Kwajalein in the renegotiations of the compact. And by the way, I want to congratulate Mr. Stayman for having that position. I expect that the negotiations, even though I have the fullest confidence in Mr. Stayman, I think they will go the full term of the expectation.

Could you characterize for the Committee how important Kwajalein is?

Dr. CAMPBELL. Congressman, you and I have discussed this on several occasions in the past, and I just want to underscore again, 2 years ago we did a full assessment of the full uses of Kwajalein in all aspects of our space program, our satellite program. And now, most importantly, as we go into intensive R&D on both TMD systems and potentially in the future on BMD systems, I have got to say that we view these facilities as absolutely critical.

And in our ongoing activities on the island, I must say that we have had to, on short notice, request additional space, additional area for activities commensurate or associated with this testing and other procedures, and we have had extremely responsive comeback from Kwajalein on all aspects of our testing and our programs.

So I would stand by our earlier statements and perhaps even add to them as an indication about how important we think this is, not only for the current programs but for the future as well. Our department stands fully by our desire for maintaining the fullest possible defense relationship.

Mr. UNDERWOOD. You would character this as a matter of vital national defense, that we continue to have access?

Dr. CAMPBELL. That is why I am here today. I know this is on a variety of other issues. This is a testament to our department's very strong goal of reaching a satisfactory conclusion that meets our interests and also the interests of the islanders, and I hope you are wrong. I hope that the political deliberations will be intense but short, because I think it is in the interests of both——

Mr. UNDERWOOD. Well, maybe it is in his capacity of negotiating with the FSM that I am referring to.

Mr. YOUNG. Gentlemen, I am going to recognize the gentleman from America Samoa for about half a minute. Then I am going to recognize Mr. Doolittle and then Mr. Miller again.

Mr. FALEOMAVAEGA. Thank you, Mr. Chairman.

I just want it clear for the record, I have here excerpts taken from a January 13-14, 1956, meeting of the U.S. Atomic Energy Commission Advisory Committee on Biology and Medicine, quotes taken regarding Utirik Atoll. Utirik is by far the most contaminated place in the world. Utirik is a very intriguing place that can be made—a study can be made for the people, studies to get a measure of the human uptake when people live in a contaminated environment.

Quote, while it is true these people, the Utirik people, do not live, I would say, the way Westerners do, civilized people, it is neverthe-

less also true that these people are more like us than the mice, end of quote. People in Utirik were exposed to 24,000 millirems when the Bravo test was taken in 1954. The Environmental Protection Agency standard regulates a maximum limit of 15 millirems per year as a maximum dose limit for human beings.

Thank you, Mr. Chairman.

The gentleman from California, Mr. Doolittle.

Mr. DOOLITTLE. Thank you, Mr. Chairman.

Dr. Seligman, or actually maybe it is Mr. Boyce that I would wish to address this question to first: The issue of the compact renegotiations, that will commence in earnest this fall; is that right?

Mr. BOYCE. Yes, sir.

Mr. DOOLITTLE. And could you describe the process of the compact renegotiations? I mean, that extends over a certain number of months, I guess, and is expected to be completed by what time?

Mr. BOYCE. The scheduled duration is 2 years, Congressman, and as Al Stayman here to my left who will be the special negotiator has indicated, we will try to do it in a way that minimizes the enormous travel requirements and, you know, budgetary resources on both sides. So we are trying to meet halfway as much as possible and, of course, working in the FSM or in the FAS states and in Washington as well.

Mr. DOOLITTLE. So the FAS, their compact is going to be up at the same time; is that right?

Mr. BOYCE. There are actually two separate compacts as a part of this. Maybe I could ask Al to answer it specifically.

Mr. DOOLITTLE. Okay.

Mr. STAYMAN. Congressman, there was one Compact, the Compact of Free Association, which was nested in the Compact Act, which Congress passed with a number of additions. That covers both the Republic of the Marshall Islands and the Federated States of Micronesia. Many of the provisions are due to expire at the end of the 15th year. The renegotiations will be focused only on those due to expire. We will begin in the 13th year. If we are not finished by the 15th year, there is an automatic 2-year extension if negotiations are ongoing.

Mr. DOOLITTLE. And you are the chief negotiator for both of those?

Mr. STAYMAN. Yes, I have been elected for that position, and won't begin for several weeks.

Mr. DOOLITTLE. Okay. Could you tell us what issues you intend to include in the compact negotiations?

Mr. STAYMAN. Well, you have put me in a very awkward position. I not only don't have the job, I don't have negotiating instructions. But I think just from discussions today, health care certainly has to be a primary issue of concern, certainly to the people of the FAS. And I imagine the Committee, too, would share my concern about making sure that the level of health care, particularly in the Marshall Islands, where there is the nuclear legacy, is substantially improved.

Mr. DOOLITTLE. Will these negotiations include additional money beyond the initial $150 million for the settlement of the nuclear-related claims?

Mr. STAYMAN. As far as money in connection with nuclear claims settlement, the procedure set forth in the Compact is the so-called changed circumstances provisions of Article 9 of the 177 Subsidiary Agreement. We expect the Marshall Islands will be submitting a petition for further compensation under those provisions. So at this time we expect, because the procedures laid forth in the law are different, that specific compensation for nuclear claims would be handled, you know, through the Article 9 changed circumstances petition.

I would just note, however, that there is a generic blanket authorization for Congress to provide additional money at any time, section 105(c) of the Compact, and it has been exercised from time to time by Congress.

Mr. DOOLITTLE. It was my privilege to visit the Marshall Islands with the congressional delegation that went there a few months ago, and that has never been exactly clear to me, how they—once the people of Bikini were sent back, went there to live, and then they sent them away again after they reversed their position that had previously been determined that it was safe to live there. And I guess they are now asking for, which is reasonable in light of their history, I think, for some sort of a guarantee from the administration that it is safe for the people to resettle there. Could you tell us what the administration's position might be on that?

Mr. STAYMAN. Yes. In fact, the leadership of Bikini met with the Secretary of the Interior several months ago asking for such a guarantee. The Secretary's response was really two part. The first is that, in light of the mistake, if we can call it that, in the earlier resettlement—that is, the U.S. Government said it was safe to go back, they went back, data showed that because of their consumption of local food, their dose was going above what had been predicted and they had to be moved off—when Congress did the Compact, there was a great awareness of the problem in having the islanders rely upon assurances from the Federal Government.

That is why the resettlement agreements, if you look at the legislative history there, empower the locals to hire their own experts and exercise their own judgment with respect to going back, and that doesn't mean that the U.S. is not going to be there. The Department of Energy has an aggressive program in monitoring.

It is really more a question of are we going to be a partner in this process or are we going to be directing this process. Our concern was that having the U.S. direct resettlement had not been a successful policy and that this policy of partnership, which is now working, I think, much better, or certainly it is working very well in the case of Rongelap, and Bikini not far behind.

A second point that the Secretary made was that you really couldn't say very much about resettlement until the remediation recommendations had actually taken place. Now, what is happening in Rongelap is they have signed a contract, and they are implementing these remediation recommendations that, you know, DOE, the International Atomic Energy Agency, and their own experts all agree on. So, when they complete that process and are able to verify that scientifically, then it is time, I think, for individuals to make a decision as to whether or not they are reassured personally enough to go home.

Mr. YOUNG. Mr. Stayman, I love your dissertation, but that is enough right now.

Mr. STAYMAN. Okay.

Mr. YOUNG. Mrs. Christensen.

Mrs. CHRISTENSEN. Thank you, Mr. Chairman. Many of my questions have been answered, but I was champing at the bit on the health issues. So I just wanted to sort of make a comment, and maybe I can get a response if you feel one is indicated.

But I am concerned about the scope of the health care that is provided, and we heard some comments like criteria may be manipulated or that the people who are covered, the numbers have been inflated, and maybe some doubt about what changed circumstances could be brought to bear on the negotiations. And I realize that the Department of Energy has provided care for those who are directly exposed in this funding, although not enough for those who have been relocated.

But as a family physician for more than 20 years, I cannot discount what Congressman Underwood talked about in terms of the anxiety and the effects that that has on the health of the people of the Marshall Islands, and it extends beyond those who were exposed or the families of those who were—the progeny of those who were exposed. That has a terrific effect on a broad number of health issues.

And in addition to that, there was some discussion prior on the loss of the vegetation and the normal and traditional diet, and there have been many studies that have demonstrated how that affects the health of people adversely and produces many chronic illnesses.

So when we talk about providing health care and as we look to negotiating a new compact, we can't draw a line with those who were directly affected or those who are related to those affected because it is really far-reaching. And since it sounds as though we knew that the wind had shifted, that there might have been time to not have that nuclear testing take place, we have a serious responsibility here. And it sounds like all of the health care needs of the people, you know, may be related to this event because it sets off a series of health events, and it is very difficult to distinguish where it ends.

Mr. STAYMAN. I think you raised an excellent point, Congresswoman. The Compact structured health care in a way that there are essentially three layers of programs, and what we are seeing is certainly a desire by people to get themselves into a more sophisticated program. We have to go back in the context of renegotiation and look very carefully at these concerns you talk about, the health concerns of changes in diet and also the need to reassure people and deal with the anxiety caused by living in an environment in which there has been testing.

Mrs. CHRISTENSEN. Thank you, Mr. Chairman.

Mr. YOUNG. All right. I thank the lady.

Mr. Miller, you had a couple more questions.

Mr. MILLER. Just to follow up. Let me state, and I just want to put this on the record at this time because I may not be here when they testify, but the testimony of John Mauro is that the criteria used in resettlement, the criteria differ markedly from the cleanup

criteria of 170 millirems for the average individual cited by Lawrence Livermore Lab:

> "The results of our analyses revealed that if the Marshall Islands were a State in the United States, resettlement of the northern island of Enewetak Atoll would not be permitted under EPA criteria without extensive remediation and/or institutional controls."

And I just put that in the record because apparently that is where this concern has been raised about the analysis of the data, and I want to raise that point here so hopefully the other panels can respond to it.

I also want to—you mentioned in response to Mr.—I think to Mr. Faleomavaega, that if the Marshallese knew about additional classified documents you would be happy to know about it. The burden is not on them. The burden is whether the department knows about additional classified—have all the documents been declassified and disseminated?

Mr. SELIGMAN. I doubt that all of the documents have been declassified. No, they have not.

Mr. MILLER. So the answer isn't whether or not you have given 170 boxes. The question is, has all the relevant data put out into the public as was promised? Where are we in that process?

Mr. SELIGMAN. I will have to get an answer for you. I don't know.

Mr. MILLER. Mr. Stayman, do you know where we are in the declassification of all this information?

Mr. STAYMAN. I know that the DOE did an extensive review in response to their annual meetings with the communities. I don't know if that review has been concluded.

Mr. MILLER. So we haven't had a summation done of what has been released, what hasn't been released or anything to date, do you know?

Mr. STAYMAN. Well, I am sure there is a record of what has been released. Your question of what is left, I don't know whether it is an ongoing process or——

Mr. SELIGMAN. We have a summation and inventory of everything that has been released.

Mr. MILLER. Can you make—do you have a summation of what is yet to be released?

Mr. SELIGMAN. Yes, we do.

Mr. MILLER. Can you provide that for the Committee?

Mr. SELIGMAN. Absolutely.

Mr. MILLER. That might be helpful. If I might, just one quick question, Mr. Chairman. The status of the $150 million trust fund is what today?

Mr. STAYMAN. It is paying out, you know, the health, the payments to the four communities, the tribunal administration, and then the remainder is paid out for individual and community claims which are filed and adjudicated by the tribunal. So I don't know what the balance is now, but it is continuing its work.

Mr. MILLER. Is that a trust fund where the core can be—the principal can be invaded?

Mr. STAYMAN. Yes.

Mr. MILLER. So it is not just a question of what the trust fund spins off, it is a declining balance in the trust fund?

Mr. STAYMAN. Right. In fact, at the end of year 15, the Compact requires that any residual be transferred to the United States Treasury.

Mr. MILLER. So it is sort of a trust fund. It is a trust fund that can be invaded, and the expectation is that at the end of 15 years it will be exhausted or there will be some small residual there to be returned.

Mr. STAYMAN. Right. The provisions require that the payments be made out essentially on a pro rata basis, and if more money is available, then you would pay more.

Mr. MILLER. So it is not just out of earnings, so to speak?

Mr. STAYMAN. Right. There is a schedule to make sure that earnings cover key programs but not necessarily cover all the claims.

Mr. MILLER. Is that happening?

Mr. STAYMAN. Yes, that is happening. They have only paid—they can tell you—it is about 60 percent or 50 percent on claims so far, and that number may decrease.

Mr. MILLER. Thank you.

Mr. YOUNG. I want to thank the panel for your testimony. There will probably be some written questions. Mr. Stayman, I want to congratulate you, and we will be watching you very carefully in these negotiations.

Mr. STAYMAN. Thank you.

Mr. YOUNG. And I would also suggest that one other thing, this is not off the record, but it concerns me, we are talking about $150 million, a very small amount of money for a great many people that were displaced, and when this disaster, if it ever comes to an end in Europe, it will be $200 billion rebuilding a country that we tore down.

I think we ought to put this in perspective and say we also have done some things that we ought to be willing to bite the bullet for. Under the guise of humanitarian principles and defense, we ought to really address the issues that affect these people, and I want to thank the panel.

Mr. STAYMAN. Thank you.

Mr. YOUNG. You are excused.

The gentleman from Guam.

Mr. UNDERWOOD. Mr. Chairman, I remember that Mr. Stayman said he had no instructions for negotiations. Perhaps we can have a hearing and help him get some.

Mr. YOUNG. I am confident before Mr. Stayman is through with these negotiations there will be a lot of input from individuals on this Committee.

Mr. UNDERWOOD. Okay. Thank you.

Mr. YOUNG. The next panel will be the Honorable Philip Muller, Minister of Foreign Affairs and Trade, Republic of the Marshall Islands, Majuro, Marshall Islands; the Honorable Marie L. Maddison, Secretary of Foreign Affairs and Trade, Republic of the Marshall Islands, Majuro, Marshall Islands; H.E. Tony A. deBrum, Minister of Finance, Republic of the Marshall Islands, Majuro, Marshall Islands.

And I would like at this time, all the honorable people, to extend my thanks to yourselves, and of course the president, and our re-

ception we had and the exposure that we had to your fine people and your parliament. So, again, you are welcome.

Mr. Muller, you are first up.

**STATEMENT OF PHILIP MULLER, MINISTER OF FOREIGN AFFAIRS AND TRADE, REPUBLIC OF THE MARSHALL ISLANDS**

Mr. MULLER. Thank you, Mr. Chairman. Mr. Chairman, before I get to the serious issues in front of the Committee, I would just like to let you know I am still feeding your marlin.

Mr. YOUNG. Thank you, sir. The one I didn't catch and you did.

Mr. MULLER. Mr. Chairman, distinguished members of the House Committee on Resources, it is an honor for me and my colleagues to appear before you today on behalf of the Republic of the Marshall Islands Government. In addition to those of us seated in the front, I have with me the speaker and the vice-speaker of Nitijela, as well as representatives from the four atolls, including Minister Johnsay Riklon, Minister Hiroshi Yamamura, Senator Henchi Balos—Senator Ishmael John and Senator Henchi Balos from Kwajalein.

First of all, allow me to convey the greetings of President Kabua and the people of the Marshall Islands, as well as our sincere appreciation to you, Mr. Chairman, members and staff, who joined this Committee's CODEL to the Marshall Islands. We also thank you for convening this important hearing to consider the complex radiological conditions in the Republic of the Marshall Islands.

Before I begin, I want to extend our congratulations to Mr. Allen Stayman as the U.S. Government's compact negotiator. Mr. Stayman is well respected in the Marshall Islands and knowledgeable about our bilateral relationship. We look forward to working with him. However, because the prices of this upcoming renegotiation is still unclear to the Marshall Islands, we hope to receive assurances that the position has full authorization to negotiate on behalf of the U.S. Government.

My testimony today focuses on the unique and important bilateral relationship between the U.S. and the Republic of the Marshall Islands. Secretary Maddison will summarize where the four atolls are in terms of their progress in addressing various radiology issues. Mr. deBrum will shed light on the national impacts of the testing program, as well as the successes and failures of the section 177.

Mr. Chairman, it is gratifying for the RMI government to know that the U.S. and the RMI Governments share the same commitment to our bilateral relationship, as this Committee has demonstrated both in the Compact of Free Association and in the corresponding resolutions recently forwarded by the House of Representatives and the Nitijela.

As you know, the Marshall Islands provide the U.S. with a buffer zone between the U.S. and potential threats from Asia. The Compact also provides the U.S. with sole military access to approximately 1 million square miles of the Pacific Ocean where no other foreign military can enter. The Marshall Islands supports U.S. activities in relation to the testing of its missile defense programs at the Ronald Reagan Strategic Defense Initiative Test Site at Kwajalein Atoll.

On many occasions, the RMI Government has promptly accommodated the Department of Defense requests to utilize additional islands in Kwajalein, as well as islands in the northern parts of the Marshall Islands to expand these activities. The RMI Government is pleased to support the strategic needs of the United States. We are all familiar with the nuclear legacy in the Marshall Islands and the Marshallese people's contribution to the end of the Cold War.

My main point today is that it is imperative to assist the communities adversely affected by the testing program. In addition to being a moral and legal obligation, raising the needs of the nuclear-affected communities is essential to maintaining the strategic partnership.

While the RMI Government is committed to its bilateral relationship with the U.S., we believe that the U.S. Government must address the lingering needs of communities affected by the U.S. military objectives, including communities displaced by the missile testing program.

Communities in the Marshall Islands suffer from the hardships of displacement, radiation-related health and environmental problems, and a variety of social and economic problems that my two colleagues at this table will expand upon. The RMI Government knows that the assistance provided in Section 177 of the Compact is manifestly inadequate to respond to our complex radiological needs in the Marshall Islands. We request that this Committee address the inadequacies of section 177.

Fortunately, Congress provides a mechanism in the Compact for our nations to consider the need for additional assistance to address the consequences of the U.S. nuclear weapons testing program. This mechanism is Article 9 of section 177 of the Compact, the changed circumstances provision. The RMI Government will submit a changed circumstances petition for Congress to consider in the very near future. This petition demonstrates that injuries resulting from the U.S. nuclear testing program have arisen and been discovered in the RMI since the Compact took effect, that could not reasonably have been discovered in the RMI prior to the effective date of the Compact.

The RMI Government looks forward to working with Congress in consideration of the RMI's petition on changed circumstances. As strategic partners, we will continue to extend into the future the RMI Government hopes to gain the cooperation of this community in considering this petition.

Mr. Chairman, the RMI Government also requests this Committee's assistance to address the difficulties the RMI Government is having in implementing the economic provisions of the Compact. One of the fundamental tenets of the Compact is the notion of mutual security. This principal is expressly stated in the mutual security agreement, and I will quote:

> "The Government of the United States and the Government of the Marshall Islands recognize that sustained economic advancement is a necessary contributing element to the mutual security goals expressed in this agreement."

The concept of mutual security is premised on the shared security resulting from the Compact. The U.S. gains military security and the Marshall Islands gain economic security. Specific provi-

sions in the Compact are intended to foster economic development in the Marshall Islands, a condition necessary to support the security requirements of the United States.

Although there are many provisions of the Compact intended to boost the RMI security and economic development, the RMI Government is having great difficulty implementing these provisions. Unfortunately, these provisions provide some of the most basic services to the Marshallese people. These provisions, which I detail in my written statement, include economic benefits to offset large economic incentives, essential air services, and the rights of Marshallese to seek employment benefits.

Regrettably, the RMI notes that the U.S. has locked in security rights under the Compact, and it enjoys those on an ongoing basis, some in perpetuity, and yet when it comes to performing U.S. corresponding obligations to support economic development, the RMI Government encounters stalling and excuses from the administration.

With regard to the RMI's economic development, I am pleased to report that although the RMI receives very one-sided criticism of the RMI's economic initiatives by the Department of State, we have made tremendous strides in the last year. Some of our progress includes lowering taxes, adopting legislation to establish an intergenerational trust fund and to attract foreign investment, unprecedented cooperation with the business community, and increased transparency in the government.

Mr. Chairman, I find it outrageous that we would hear from the State Department without recognizing some of the positive efforts that we have taken to make our economy more viable and more vibrant. We will have a chance to respond to some others.

I thank you very much, Mr. Chairman.

[The prepared statement of Mr. Muller follows:]

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**STATEMENT TO THE HOUSE RESOURCES COMMITTEE**
**BY THE HONORABLE PHILIP MULLER,**
**RMI MINISTER OF FOREIGN AFFAIRS AND TRADE**
**May 11, 1999**

Mr. Chairman and Distinguished Members of the House Committee on Resources:

I bring warm greetings and "Iakwe" from His Excellency, President Imata Kabua, and the people of the Republic of the Marshall Islands. It is my pleasure to introduce the members of our delegation - The Honorable Jurelang Zedkeia, Vice-Speaker of the Nitijela, Minister of Finance Tony de Brum, Minister of Internal Affairs and Representative of the People of Utrik, Hiroshi Yamamura, Minister in Assistance and Representative of the People of Rongelap, Johnsay Riklon, Minister of Justice and Representative of the People of Ailuk, Hemos Jack, Senator Ishmael John, Representative of the People of Enewetak, Senator Henchi Balos, Representative of the People of Bikini, and Secretary of Foreign Affairs & Trade Marie Maddison.

It is an honor for me to appear today on behalf of the Republic of the Marshall Islands (RMI). This hearing provides a valuable opportunity to share views on important issues as we move toward Compact negotiations later this year. For my part, I will discuss the importance of the bi-lateral relationship between the RMI and the U.S. Secretary Marie Maddison will summarize where the four atolls are in term of the Compact related programs they receive as well as their future needs. Minister Tony de Brum will describe the national impacts of the U.S. Nuclear Weapons Testing Program. The RMI Government also supports and appreciates the contribution of the Nuclear Claims Tribunal to this hearing. Chairman Oscar de Brum will provide a progress report on the Tribunal's ability to make personal injury and property awards.

Congressional visit to the RMI, February, 1999

President Kabua asked me to convey his sincere thanks to the Chairman and members and staff of this and other Committees for your visit to the RMI this February. We certainly appreciate your willingness to travel such great distances to improve your

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understanding of our bilateral relationship. The RMI Government views the CODEL visit as a demonstration of this Committee's commitment to the bilateral relationship. Because of your trip, perhaps this Committee has a better understanding of the time and resources the RMI Government devotes each time we come to Congress to work with you.

While previous Congressional visits have been of mutual benefits, it is our view that this recent trip was a particularly worthwhile and successful visit. Not only was there a large number of members in the visiting delegation, but a wide range of committees and sub-committees were represented as well. We enjoyed this rare opportunity to have exchanges with you and your staff on a wide-range of issues. We hope that members of your delegation found the visit to be just as useful and informative.

We are thankful that the delegation was able to participate in a special session of the Nitijela. During that session, we presented Nitijela Resolution # 85, the measure that supports the renaming of the U. S. Army Kwajalein Atoll (USAKA) facility to honor President Ronald Reagan. I attach a copy of that Resolution, together with the copy of Nitijela Resolution # 67 of November 3, 1998, a related resolution recognizing the importance of the bilateral relationship with the U.S.

Mr. Chairman, in your April 19, 1999, letter to President Imata Kabua, you indicated that as a result of your CODEL trip and your discussions with President Kabua you decided to convene a hearing regarding the complex and unique radiological issues in the Marshall Islands. The RMI Government appreciates your leadership in continuing to investigate radiation issues in the Marshall Islands.

Before I begin my testimony, I wish to express the RMI Government's appreciation to Secretary Albright for appointing Mr. Allen Stayman as the Special Negotiator for the Compact of Free Association. Mr. Stayman is well respected in the RMI and knowledgeable about bilateral issues. We congratulate Mr. Stayman on this appointment, and look forward to working with him. We are hopeful that the negotiating process established by the U.S. will be more transparent and cooperative than the last time. It is the RMI's hope that there will be no more situations like the Section 177 negotiations during which information was covered up and agreement was forced. The U.S. and the RMI are friends and partners and we hope the negotiation process will reflect our long history together.

The importance of the bilateral relationship

Mr. Chairman, it is gratifying for the RMI Government to know that the U.S. and the RMI governments share the same commitment to our bilateral relationship. This commitment is demonstrated both in the Compact of Free Association and in the corresponding resolutions recently forwarded by the House of Representatives and the Nitijela. The RMI Government appreciates the expressions of friendship articulated in House Concurrent Resolution 92, a resolution introduced by Chairman Young,

Congressman Gilman, and Congressman Faleomevega. In that concurrent resolution, you note that:

> ...for 50 years the Marshall Islands has played a unique and indispensable role in maintaining international peace and security through activities of the United States in the Marshall Islands which were essential to the feasibility and ultimate success of the United States-led strategy of nuclear deterrence during the Cold Ward era, as well as the United States Strategic Defense Initiative which contributed significantly to the end of the nuclear arms race;

Despite the hardships that the Marshallese have endured, it is comforting to know that the U.S. Congress is aware and appreciative of the special role that the Marshallese people played in promoting peace and security. As friends, partners and strategic allies, it is imperative to address the human and environmental consequences of world security so that our bilateral relationship can continue to grow and flourish. My colleagues at the table here with me this afternoon will describe the hardships that the Marshallese endure, and address the adequacy of provisions in the Compact intended to mitigate these consequences.

It is important to assist people who were adversely affected by U.S. efforts to promote world peace and security. In addition to communities affected by nuclear testing, our governments must respond to the needs of populations affected by the U.S. missile testing activities on Kwajalein. As you are aware, on several occasions the RMI government has promptly accommodated Department of Defense requests to utilize additional islands at Kwajalein to expand its activities. The RMI also supports current U.S. military objectives through the participation of Marshallese citizens in the U.S. armed forces. Geopolitically, the Marshall Islands also provides a permanent buffer zone between the United States and potential threats from Asia. By maintaining exclusive defense rights in this area, the U.S. extends its military access to approximately 1 million square miles of the Pacific Ocean where no other foreign military can enter.

Simply put, the relationship with the U.S. is unique and unprecedented. The RMI remains proud of the fact that no other country supports the U.S. strategic interests to the same extent that it has, and does. Clearly, however, all is not perfect with the relationship, and there are a number of issues that need to be better addressed. Fortunately, the U.S. and the RMI will have the opportunity to revisit elements of the Compact of Free Association during Compact renegotiations. The RMI is currently in the process of identifying issues it will discuss with the U.S. later in the year. What I would like to do here, however, is raise some current and pressing issues that need prompt resolution:

Adequacy of Section 177 and the nuclear-related provisions of the Compact

As you will hear today, the RMI is extremely concerned about the inadequate funding and narrow parameters of Section 177 and its related provisions. The failures of Section 177 allow human suffering caused by the testing to continue. This situation must be

addressed immediately, as the whole credibility of the 177 programs and claims settlement process as a means of redressing injuries and other losses is now in question.

As the Committee may be aware, when Marshallese claims for nuclear-testing related injuries and losses were removed from the U.S. courts, this was done on the premise that the funding for the RMI Nuclear Claims Tribunal would result in just and adequate compensation to proven claimants. Testimony before this Committee will establish that the $150 million amount that was allocated for the fund was determined purely as the result of a political process, without any attempt to quantify existing, or future injuries or losses. The RMI Government does not want to reopen the claims process in U.S. courts and hopes that Congress will provide a timely infusion of adequate funding for the RMI Nuclear Claims Tribunal.

The RMI Government also requests this Committee to consider its changed circumstances request. The petition demonstrates injuries resulting from the U.S. Nuclear Weapons Testing Program have arisen and been discovered in the RMI since the Compact took effect that could not reasonably have been discovered prior to the effective date of the Compact. Such injuries render the terms of the Section 177 Agreement manifestly inadequate to provide just and adequate compensation for Marshallese people and damage or loss of land resulting from the U.S. Nuclear Weapons Testing Program.

In part because of a lack of scientific knowledge about the fallout range and effects of nuclear bombs, and in part because of the U.S. security needs regarding information about its nuclear arsenal, the Nuclear Claims Tribunal was funded without the Marshallese people knowing with any certainty the true extent of the personal injuries or the environmental property damage that the 67 nuclear blasts actually caused. Since the time the Compact was implemented, this information has become increasingly clear. As strategic partners with continued interests extending into the future, the RMI Government hopes to gain the cooperation of this Committee in the consideration of the RMI's petition on changed circumstances.

The mid-corridor people

Mr. Chairman, as we move forward into the Compact negotiations, we believe that it is important to invite suggestions from Congress regarding ways to better address the humanitarian needs of the people of the Marshall Islands, particularly those affected by strategic interests. For example, multiple communities within the RMI were displaced in conjunction with the nuclear testing program and the testing of missile defense systems. One of the unexpected outcomes of the massive displacement of communities in the Marshall Islands is the stifling of human development. I refer here to a generation or more of Marshallese whose whole health and education development was essentially arrested while they attempt to deal with disruptions to their communities.

The displacement of communities is much more complex than simply moving to another island. Accompanying their displacement are shifts to new living accommodations, hunger, lack of employment, and an inability to access much needed

educational and health services. Consider the "mid-corridor" people from Ebeye, for example. The mid-corridor people whose land is literally the target for U.S. missiles were temporarily relocated to Ebeye Island. When this relocation took place in 1965, 256 people were provided temporary housing on Ebeye. Today, that population has swelled to 2,500 people who are forced to share the same, confined living area as the original 256 people. Because of the extreme overcrowding and urban poverty the mid-corridor people contend with, people literally sleep in shifts in order to accommodate members of their households. The average house in Ebeye is a two-room apartment with no flush toilet and 37 people to a household.

Mr. Chairman, there are entire populations in the Marshall Islands, such as the mid-corridor people, who are slipping through the cracks of the Compact's programmatic assistance. Members of this Committee's CODEL who visited Ebeye in February visited some of the homes of the mid-corridor people and can attest to the dilapidated, overcrowded housing conditions and the horrific condition of the water, sanitation, health and education facilities for this population. Due to extreme overcrowding, the only playground for the mid-corridor children is the local garbage dump. The area of Ebeye that the mid-corridor people, as well as many of the displaced people from Rongelap, currently reside in is "Dump Town." I know that the U.S. Government never intended for the Marshallese people with land rights on the islands supporting U.S. missile defense programs to live in such squalor.

A permanent solution must be found urgently to alleviate this desperate situation. When the mid-corridor people were moved from their islands to Ebeye, they were promised that their housing, power and water would be taken care of. Chairman Oscar deBrum was involved in the relocation of these people and can testify to the support that the U.S. Government promised these people. Unfortunately, there are no written documents that articulate the promises made. The RMI Government has been asked by the Administration to produce written proof of these promises before any action can be taken. We cannot produce documents testifying to the promises made to the mid-corridor people, nor can we produce documents that specify the promises made to the communities displaced by the nuclear testing program. It is unfair to demand such a strictness in producing records when the Trust Territory documents are not in our possession. The mid-corridor people and the RMI's most respected statesman, Oscar deBrum, know that the people were promised that they would be moved temporarily and that their housing, water and power would be taken care of in the interim. Mr. Chairman, this promise is now more than 3 decades old. It is not fair that a population should experience acute poverty because they relinquished their lands in support of the U.S. missile defense testing programs.

Let me emphasize, Mr. Chairman, that the RMI Government has always acted with great alacrity to requests from the U.S. military to accommodate its emerging needs. It is simply untenable for the RMI to receive ongoing request for assistance from the U.S. military when it is unwilling to meet even the most basic needs of the Marshall Islands.

Economics and security: the Mutual Security Agreement
One of the fundamental objectives of the U.S. when concluding the Compact with the RMI was the increase in Marshallese economic development and self-sufficiency. Indeed, the basis upon which the U.S. obtained its ongoing security rights under the Compact was the corresponding obligation on the U.S. to foster RMI's economic development. This principle is expressly stated in the Mutual Security Agreement that states:

> "The Government of the United States and the Government of the Marshall Islands recognize that sustained economic advancement is a necessary contributing element to the mutual security goals expressed in this agreement." (Agreement Between the Government of the United States and the Republic of the Marshall Islands Regarding Mutual Security Concluded Pursuant to Section 321 and 323 of the Compact of Free Association).

The concept of mutual security is premised on the shared security resulting from the Compact: the U.S. gains military security and the RMI gains economic security. Specific provisions in the Compact are intended to foster economic development in the RMI, a condition necessary to support the security requirements of the U.S. Although there are many provisions of the Compact intended to boost the RMI's security - economic development - the RMI Government is having great difficulty in implementing these provisions. Regrettably, these provisions provide some of the most basic services to the Marshallese people. These provisions include economic benefits to offset lost economic incentives, essential air services, and the rights of Marshallese to seek employment in the United States.

Section 111(d). A major aspect of the U.S. Government's obligation to provide economic growth in the RMI was the Section 111(d) Compact provisions. As I testified before the joint hearing sponsored by this Committee and the International Affairs Committee last October, the RMI lost these benefits when the U.S. made unilateral changes to the Compact that the Marshallese electorate decidedly approved. Again, we thank Congress for recognizing the economic loss as a result of the removal of the economic incentives. Yet, we have only received 1/10th of the amount established as the U.S. commitment under Section 111(d). This matter has been allowed to linger until the end of the Compact. As we begin to examine the economic growth developed by the RMI as a result of Compact assistance, it is clear that the RMI's economic growth is stifled by the unilateral removal from the Compact of essential economic benefits.

Essential air services. Another issue I raised last October is the need for the U.S. to carry through on its commitment to facilitate adequate air transportation to the Marshall Islands. Ever since the Essential Air Service protection for the Freely Associated States was allowed to elapse last September 30, 1998, there has been serious interruption to passenger and cargo flows to the RMI. In order to attend this hearing, members of the RMI delegation incurred large travel costs because they left much earlier than desired because all flights from Majuro are currently booked for the next 2 months.

We were very hopeful that this situation would be eased on February 18, 1999, when the Undersecretary of Defense authorized two additional transit stops in Johnston Island that the RMI designated Aloha Airlines to use. I regret to advise that, notwithstanding the best efforts of the Department of Defense's Office of International Security Affairs to have the U.S. Air Force implement this authorization, the Air Force has adopted an extraordinarily unhelpful and bureaucratic attitude on this matter. I find the Air Force's attitude troubling particularly since one of the direct beneficiaries to this arrangement is the U.S. Air Force itself that has ongoing assets and operations in the Marshall Islands. Many months later, we are no closer to having Aloha be able to use this authorization than we were when the transit stops were first authorized.

Employment authorization. There is often a delay in the processing of work-authorization approvals for Marshallese citizens. This delay often results in potential employers withdrawing initial job offers in favor of people who do not experience employment approval difficulties. Of equal concern is that, even if the employer was willing to hold open job offers initially, they are often unwilling to suffer the interruption in employment that occurs when extensions to work-authorization are made. This often means that employment is terminated during the extension request process, often with an unwillingness to reemploy Marshallese citizens after the extension request is finally granted. This bilateral issue must be addressed: RMI citizens are hard-working and contribute to the economic bases of their communities.

Asian Development Bank. Another major factor that undermines the economic security of the RMI that U.S. military security depends upon is the international lending institution that the Clinton Administration supports in the RMI, the Asian Development Bank. If economic development is a prerequisite and integral component of military security, then the RMI Government is at a loss to understand why the U.S. Government pushes ADB loans in the Marshall Islands. The large scale of the loans, the enormous debt burden the RMI is accruing, and the recommendations to rapidly reduce our public sector destabalizes the RMI's economic security. The RMI Government requests that the Clinton Administration allows the RMI Government's to take the lead in its financial dealings with the ADB rather than promoting a lending program that undercuts the bilateral U.S.-RMI relationship. To date, two ADB loans to the RMI, worth close to $20 million have proven totally useless. The Kwajalein fisheries project and the Majuro water distribution project have strapped the country with loan payments for failed projects.

It is with regret that the RMI has to observe that there appears to be a pattern with respect to the economic security provisions the RMI are entitled to. The U.S. has locked-in security rights under the Compact, and they enjoy those on an ongoing, dedicated basis, some in perpetuity. And yet, when it comes to performing its corresponding obligations such as providing economic development support for the Section 111(d) rights, or to facilitating the most menial of air transit approvals, the RMI Government encounters stalling and excuses. The U.S. Government's failure to implement economic provisions

in the Compact undermines popular political support in the RMI for the U.S. and its ongoing requests to the RMI for new security benefits. We do not believe that the Congress will allow this situation to continue, and we seek your assistance to remedy the situation.

Mr. Chairman, I want to thank you and your colleagues again not only for your willingness to come to the Marshall Islands, but also to hold this hearing today. We look forward to working with this Committee to address the circumstances that have led to a growing gap between the burdens assumed by the RMI and its people under the Compact and the associated benefits enjoyed by the U.S. All of the issues I raised today are in both of our nations' best interest to resolve. The RMI Government thanks you for your ongoing support and assistance.

NITIJELA OF THE MARSHALL ISLANDS

20TH CONSTITUTIONAL REGULAR SESSION, 1999 RESOLUTION NO. 85

A RESOLUTION

To recognize the value of continued friendly relations between the Republic of the Marshall Islands and the United States of America, to honor President Ronald Reagan, to recognize the strategic military importance of Kwajalein Atoll to the development of the U.S. National Defense Program, and to respectfully request the United States and the U.S. Army to rename the United States Army Kwajalein Atoll "USAKA" the "Ronald Reagan Strategic Defense Initiative Test Site at Kwajalein Atoll."

WHEREAS, on November 3, 1986, President Ronald Reagan issued Proclamation 5564, implementing the Compact of Free Association between the United States and the Republic of the Marshall Islands, which had been administered by the United States since 1947 under a United Nations trusteeship; and

WHEREAS, the Compact of Free Association was approved by the United States Congress with overwhelmingly bipartisan support on January 14, 1986, under the terms set forth in the Compact of Free Association Act of 1985 (P.L. 99-239); and

WHEREAS, the people of the Republic of the Marshall Islands and the United States have a close and mutually beneficial relationship on a government-to-government basis under the Compact of Free Association, solidified by President Ronald Reagan, and was forged through a process of self-determination and democratization which reflects the common values and cross-cultural respect that

the people of the Republic of the Marshall Islands and people of
2 the United States share; and

3 WHEREAS, in addition to providing the multilateral framework
4 for friendly political relations with other new Pacific island
5 nations, the Compact of Free Association established a long-term
6 military alliance and permanent strategic partnership between the
7 Republic of the Marshall Islands and the United States; and

8 WHEREAS, for 50 years the United States has played a unique
9 and critical role in maintaining international peace and security
10 in the Marshall Islands, essential to the feasibility and ultimate
11 success of the United States led strategy of nuclear deterrence
12 during the Cold War era, as well as the Strategic Defense
Initiative envisioned and established by President Reagan, which
14 contributed to the end of the nuclear arms race; and

15 WHEREAS, the importance of developing a National Missile
16 Defense Program to intercept hostile attacks continues and is ever
17 increasing as nations such as North Korea, Iran, Iraq, and other
18 nations develop launch capabilities; and

19 WHEREAS, Kwajalein Atoll, which is made up of 100 coral
20 islands and has a 90 mile lagoon is crucial to this military
21 alliance and further development of the Strategic Defense
22 Initiative; now therefore

23 BE IT RESOLVED by the people of the Republic of the Marshall

RESOLUTION NO. 85

Islands through their Nitijela in its 20th Constitutional Regular Session, 1999, that the people and the Nitijela:

(1) recognize the value of continued friendly relations between the Republic of the Marshall Islands and the United States;

(2) honor President Ronald Reagan in recognition of his contributions and commitment to the friendly relations between the Republic of the Marshall Islands and the United States; and

(3) respectfully request the United States and the U.S. Army to rename the United States Army Kwajalein Atoll (USAKA) the Ronald Reagan Strategic Defense Initiative Test Site at Kwajalein Atoll; and

BE IT FURTHER RESOLVED that certified copies of this Resolution be transmitted by the Clerk of the Nitijela to the Ronald Reagan Presidential Library, the House Speaker Dennis Hastart, House Majority Leader Richard Armey, House Majority Whip Tom DeLay, Senate Majority Leader Trent Lott, and the Assistant Senate Majority Leader Don Nickles.

Certificate

I hereby certify:

(1) that the above Nitijela Resolution No.85 has been adopted by the Nitijela of the Marshall Islands on the 18th day of February, 1999; and

(2) that I am satisfied that Nitijela Resolution No. 85

RESOLUTION NO. 85

has been adopted in accordance with the Constitution of the Marshall Islands and the Rules of the Nitijela.

I hereby place my signature before the Clerk of the Nitijela this 19th day of February, 1999.

ATTEST:

Kessai Note, Speaker
Nitijela of the Marshall Islands

Joe Riklon, Clerk
Nitijela of the Marshall Islands

NITIJELA OF THE MARSHALL ISLANDS

19TH CONSTITUTIONAL REGULAR SESSION, 1998, RESOLUTION NO. 67

A RESOLUTION

To express and convey the deep sense of appreciation and recognition of the continued friendly relations between the Republic of the Marshall Islands and the United States.

WHEREAS, on November 3, 1986, President Reagan issued Proclamation 5564, implementing a Compact of Free Association between the United States and the newly formed governments of Pacific island areas which had been administered by the United States since 1947 under a United Nations trusteeship; and

WHEREAS, the Compact of Free Association was approved by the United States Congress with overwhelming bipartisan support on January 14, 1986, under terms set forth in the Compact of Free Association Act of 1985; and

WHEREAS, in addition to providing the multilateral framework for friendly political relations with the new Pacific island nations, the Compact of Free Association established, on a bilateral basis, a long-term military alliance and permanent strategic partnership between the Republic of the Marshall Islands and the United States; and

WHEREAS, for 50 years the United States has played a unique and indispensable role in maintaining international peace and security in the Marshall Islands, essential to the feasibility and

1 ultimate success of the United States led strategy of nuclear
2 deterrence during the Cold War era, as well as the United States
3 Strategic Defense Initiative which contributed significantly to the
4 end of the nuclear arms race;
5 WHEREAS, the people of the Marshall Islands and the United
6 States have a close and mutually beneficial relationship which
7 evolved from liberation and military occupation at the end of World
8 War II to the United States administration under the United Nations
9 trusteeship from 1947 to 1986 and which is now maintained on a
10 government-to-government basis under the Compact of Free
11 Association; and
12 WHEREAS, this relationship was forged through a process of
13 self-determination and democratization which reflects the common
14 values and cross-cultural respect that the people of the United
15 States and the people of the Marshall Islands have developed since
16 the middle of the last century when the American missionaries first
17 came to the Marshall Islands; and
18 WHEREAS, the people of the United States and its allies paid
19 a high price, including great loss of life and injuries in the
20 heroic battles for Kwajalein and Roi-Namur, to liberate the
21 Marshall Islands during World War II, and
22 WHEREAS, the people of the Marshall Islands suffered great
23 injury and hardship due to the exposure of individuals to nuclear

1 test radiation and the radiological contamination of the Marshall
2 Islands; and
3 WHEREAS, in recognition of the unique role of the Republic of
4 the Marshall Islands in supporting the United States during the
5 Cold War and the hardships suffered as a result of the nuclear
6 testing program, the 104th U.S. Congress provided additional
7 assistance, pursuant to the Compact of Free Association Act of
8 1985, to meet the special needs of the people of the Marshall
9 Islands arising from the nuclear testing program, including funding
10 for radiological monitoring, island rehabilitation, and community
11 resettlement programs; and
12 WHEREAS, within the framework of the settlement of all legal
13 claims under Section 177 of the Compact of Free Association Act of
14 1985, the U.S. Congress continues to monitor and evaluate measures
15 being taken to implement programs authorized to promote the
16 recovery, resettlement, health, and safety of individuals and
17 communities affected by the nuclear testing program in the Marshall
18 Islands; and
19 WHEREAS, the special relationship between our nations and our
20 peoples is a bond that has grown strong as a result of our shared
21 history and common struggle to promote international peace and
22 security and to secure liberty for future generations; and
23 WHEREAS, the Republic of the Marshall Islands continues to

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1 play an important strategic role in the preservation of global
2 peace; now therefore,
3 BE IT RESOLVED by the people of the Republic of the Marshall
4 Islands through their Nitijela in its 19th Constitutional Regular
5 Session, 1998, that the people and the Nitijela;
6 (1) recognize the value of continued friendly relations
7 between the Republic of the Marshall Islands and the United
8 States;
9 (2) intend to maintain, through appropriate mutually
10 agreed political and economic measures, the long-term military
11 alliance and strategic partnership defined by the Compact of Free
12 Association as a primary element of bilateral relations between the
13 Republic of the Marshall Islands and the United States in the
14 future;
15 (3) recognize the importance of ongoing measures to
16 address, in accordance with the legal settlement set forth in
17 Section 177 of the Compact of Free Association of 1985, the impact
18 on the Marshall Islands of the nuclear testing program; and
19 (4) intend, through its oversight responsibility and the
20 exercise of constitutional authority regarding negotiation and
21 approval of bilateral agreements with respect to those provisions
22 of the Compact of Free Association which expire in 2001, to
23 exercise vigilance in preserving the interests of both countries to

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ensure that the friendship between the Republic of the Marshall Islands and the United States is sustained as mutually agreed pursuant to their respective constitutional processes.

Certificate

I hereby certify:

(1) that the above Nitijela Resolution No.67 has been adopted by the Nitijela of the Marshall Islands on the 5th day of February, 1998; and

(2) that I am satisfied that Nitijela Resolution No. 67 has been adopted in accordance with the Constitution of the Marshall Islands and the Rules of the Nitijela.

I hereby place my signature before the Clerk of the Nitijela this 5th day of February, 1998.

ATTEST:

Kessai Note, Speaker
Nitijela of the Marshall Islands

Joe Riklon, Clerk
Nitijela of the Marshall Islands

Mr. YOUNG. Thank you, Mr. Muller, excellent testimony.

The Honorable Marie Maddison.

**STATEMENT OF MARIE L. MADDISON, SECRETARY OF FOREIGN AFFAIRS AND TRADE, REPUBLIC OF THE MARSHALL ISLANDS**

Ms. MADDISON. Thank you, Mr. Chairman. Before I make my statement, I would like to note for the record the written statement submitted by the four atoll delegations, and I also have a summary of the written statement for detail.

Mr. YOUNG. It will go in, without objection.

Ms. MADDISON. Chairman Young, distinguished members of the House Resources Committee, representatives of the U.S. Government, ladies and gentlemen, I am honored today to relate to you a story, a story of four unique Marshallese communities who, more than forty years after the United States concluded its nuclear testing program in the Marshall Islands, continue to live with a nuclear legacy that shapes their daily existence.

It is important to understand the valuable relationship that exists between land and community, community and the ecosystem, the ecosystem and the sustainability in the Marshall Islands. It is very important because we are talking about communities that were uprooted, torn apart, scattered and contaminated.

To address the road to recovery, therefore, government measures should help the affected communities to grow roots, mend and cement the tears, bring together the segments and clean up or get rid of the contaminants. The Governor of the Republic of the Marshall Islands supports each of the four most affected communities, Enewetak, Rongelap, Utirik and Bikini, in their respective efforts to recover themselves and rebuild the lives of not only their communities but also individual members of their communities.

The price of reconstruction requires accessibility to noncontaminated land. Thus, land and contamination are two long-standing issues that are yet to be fully or properly resolved.

I recognize congressional outreach in supporting radiological efforts of Enewetak, Bikini and Rongelap. However, additional support is sorely needed in the following areas.

Moneys generated by trust funds for cleanup are an essential element to the recovery price of these atolls. While trust funds cannot replace the lasting value of land, it can be the next best thing, as we have seen demonstrated by existing trust funds. Enewetak's claims are minimal, $160 million, minimally sufficient to clean and rehabilitate its northern islands, while Rongelap requires the full $45 million, and Bikini finds its $90 million resettlement trust fund barely adequate. Contamination of Utirik is yet to be assessed.

These figures may sound large, but please compare them to the $147 billion estimate for the DOE program of cleanup in the United States. Compared to these billions, RMI figures are modest and reasonable.

The availability of trusted scientific expertise to guide cleanup and recovery steps is just as important. While the collection of scientific data may not be an issue, the interpretation of data is a major concern. We do not want to repeat the mistake of a pre-

mature resettlement. Chronic exposure to radiation, the related health problems, and the psychological and social stress of repeated removals is the legacy left to the Enewetak, Rongelap and Bikini communities that were prematurely resettled.

Recognition of an agreed-upon cleanup standard is essential to ensure safety in an affected environment. The EPA standard of 15 millirems has been adopted by the Nuclear Claims Tribunal. We believe that RMI citizens deserve to be protected to the same standard as U.S. citizens, the collaboration of expertise among those in fields related to nuclear radiation, health, agriculture, ecoculture. The food chain and the human body are complex systems that require a coordinated range of services. The communities will continue to need the availability of the USDA food programs and related technical support at this stage of recovery.

The recovery process also requires accessibility of the people to quality education and health care services. Again, earnings from the trust fund mechanism have supported the education of the members of these respective communities in the form of additional teachers, better school facilities and scholarships.

One aspect of the recovery, an additional need that is yet to be addressed, is the advancement of the people in radiation-related fields. Additional assistance should be provided toward the promotion of such a knowledge in these communities.

The availability of the 177 health care program and the DOE medical monitoring program has not been appropriately established and linked to make quality health care accessible to the community members. It is thus important that additional support should be provided to the 177 health care program, and that the medical team in the DOE program treat all members of the community it serves.

Availability of needed support infrastructure in the areas of transportation, power generation and communication are needed to fully access recovery and sustainability of these communities. The cost expended by the communities to address transportation needs such as shipment of USDA food commodities, transport of drivers, et cetera, are major drains in the budget of these communities. While Utirik had experimented with solar powered community lighting systems, much is yet to be done to improve such technology and other energy-related areas to support the efforts of the communities.

As it is with the transportation and power generation, communication is necessary to bring persons and communities together, and it is a priority area of need, particularly for all the outer islands of the Republic.

In conclusion, Mr. Chairman, the needs of the people of Enewetak, Rongelap, Utirik and Bikini should be truly and adequately assessed and addressed in a coordinated and comprehensive manner.

It is quite obvious that, one, cleanup is still an issue and should be addressed properly. Cleanup efforts should complement and supplement the development of knowledge and expertise in nuclear exposure related fields within the Republic, particularly in the affected communities. In addition, a cleanup standard must be agreed upon.

Two, equitable fund adjustments are needed under the trust fund mechanism for all the communities to improve their resource base and address community needs.

Three, USDA food programs and technical expertise from the U.S. Government need to be extended to complement, supplement, enhance the efforts, the recovery efforts of the communities.

Four, expansion of the scope of the DOE medical monitoring program to include all residents of the affected communities will lead to a better collaboration with the existing 177 health care and other national health care programs.

Five, provision of additional assistance toward transportation, power generation and communication are just as needed to fully implement and enhance the recovery and development of strategies of these communities.

I thank you for your attention and support.

[The prepared statement of Ms. Maddison follows:]

**MINISTRY OF FOREIGN AFFAIRS**
P.O. BOX 1349 • REPUBLIC OF THE MARSHALL ISLANDS
Majuro, Marshall Islands 96960

**STATEMENT OF MS. MARIE MARIE MADDISON**
**SECRETARY OF FOREIGN AFFAIRS AND TRADE,**
**REPUBLIC OF THE MARSHALL ISLANDS**
**TO THE HOUSE COMMITTEE ON RESOURCES**
**WASHINGTON, D.C., MAY 11, 1999**

Chairman Young, Distinguished Members of the House Resources Committee, Representatives of the U.S. Government, ladies and gentlemen:

I am honored today to relate to you a story, a story of four unique Marshallese communities who, more than forty years after the United States concluded its nuclear testing program in the Marshall Islands, continue to live with a nuclear legacy that shapes their daily existence. It is a story that has become a saga of relocation and displacement, enigmatic illnesses and health care programs, the effort to understand and educate, contamination and cleanup, and wary hopes for resettlement. Most importantly, it is a story of once victimized communities intent on recovery despite the burdens and obstacles that each faces. The Government of the Republic of the Marshall Islands supports each of these four communities--Enewetak, Rongelap, Utrik, and Bikini--in their respective efforts to recover the self-sufficient and healthy lifestyle they enjoyed so many years ago on their home atolls.

In my remarks, I will focus the story by speaking to some of the larger issues that tie the four atolls together such as removal and relocation, contamination and cleanup, and resettlement concerns. I will follow this general discussion with a look at the specific situations and concerns of the four atolls as each community charts its own road to recovery and self-sufficiency.

**Removal and Relocation**

Land is the lifeblood of all Marshallese communities. When an entire community is removed from their land and relocated to new lands, the move effectively tears through the fabric of the community. Individuals from the four atolls possess in differing degrees some of the tools needed to mend this tear. As evidenced in the Compact of Free Association and in subsequent acts of Congress, the United States has acknowledged the burdens placed on the people of Enewetak, Rongelap, Utrik and Bikini as a result of the Nuclear Testing Program and provided these communities with resources to help offset these burdens. However, these resources remain woefully inadequate in light of what was lost and what must now be restored.

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I hope the following excerpts from interviews with members of the Rongelap community can convey some sense of what is lost when Marshallese are removed from their land. Listen, for example, to Minister Johnsay Riklon, the national representative from Rongelap, who has witnessed "scattering and splitting in the community. We need a base. Kids from Rongelap who live in Majuro are not involved in the Rongelap community. There aren't many community activities for them to get involved in. I don't think they feel Rongelapese." One of these Rongelap "kids," a senior in high school, explained his own sense of loss and frustration living on Ebeye where he is dependent on quarterly trust fund payments for food and other basic needs. He says, "Land is life. When you take away land it's like you commit suicide. You take away our livelihood." Today, there are large Rongelapese communities living not only in overcrowded Ebeye, but also in the isolation of Mejatto Island, the bustling Majuro capitol and far away Hawaii. Maintaining the ties between these scattered populations is an important but difficult task that has been assumed by the Rongelap leadership.

For the four atoll communities whose resource base was either lost or severely compromised as a result of the tests, the trust fund model of compensation as set up under the Compact has proven an essential asset as the communities attempt to regain greater control of their own lives. While proceeds from the trust funds cannot replace the resource base that sustained these communities on their home atolls, these same proceeds can help communities overcome past inequities as they build toward a future. For example, Councilwoman Renny Robert explained to me how the Enewtakese have used their trust funds monies to compensate for the educational disruption caused by their removal to Ujelang. Living on Ujelang from 1947 to 1980, the Enewetakese struggled for the most basic of needs, food and water. Quality education seemed a unattainable luxury. However, with the help of their trust fund monies, the Enewetakese have turned that luxury into reality for everyone on Enewetak. Two highly qualified teachers are paid to work and reside on the atoll, teaching not only school-age children but adults as well. The community is successfully "catching-up" now that they have the resources to back their efforts

In addition to education, health remains a primary concern for people from the four atolls. Prior to the testing, a healthy lifestyle supported by access to local foods and medicinal plants allowed for a sense of self-determination in terms of health. With the loss of these resources, practical compensation measures such as the extension of the U.S.D.A. food program became essential to healthy living. Mr. Chairman, let me take this opportunity to thank Congress for extending this program for another five years. Until the people of the four atolls have their lands safely restored to them, this program will be needed.

While U.S.D.A. has been a success, enigmatic illnesses coupled with the fractionalized system of health care for the four atolls has stripped many ill individuals of the sense of self-determination that is part and parcel of a healthy lifestyle. The Section 177 Health Care Program earmarked for the four atolls has proven wholly inadequate for reasons that will be further explained by Minister deBrum. At the same time, the Rongelapese and

Utrikese identified as among the 174 acutely "exposed" victims of the tests may often be "ping-ponged" back and forth between medical programs since the DOE program strictly limits treatment to radiogenic illnesses without consideration for the secondary conditions that are often indirect results of a radiation-related condition. In many cases, patients and their families are left in the dark about the reasons for this "ping-ponging" (a term coined by Marshallese patients). Mr. Joe Saul, Mayor of Utrik, tells the story of his uncle who was sent by DOE for treatment of a radiogenic illness in Hawaii. After two weeks of tests, the DOE doctors told him that they had done all they could and referred him to the 177 Health Care Program. When Mayor Saul joined his uncle in Honolulu, it was only to hear from a new round of doctors that treatment would not be forthcoming. The uncle returned to Majuro untreated and unaware of the nature of his illness. He died three months later.

Self-sufficiency means having the resources and ability to make informed and meaningful decisions about life's basics--home, health, and education. The programs and assistance extended to the four atolls under the Compact and the assistance from Congress since has in some measure enabled the four atoll communities to make their own decisions, chart their own course. However, what was lost--i.e., self-sufficiency--has yet to be restored. Until that happens, I urge the US Government to join the RMI in its support of the four atoll communities for as Minister Riklon reminds us, "the goal for the future should be to restore self-sufficiency."

**Contamination and Cleanup**

Mr. Chairman, I submit that the cleanup of lands that remain contaminated is a key to restoration of self-sufficiency. At the outset, I would like recognize Congressional assistance that has reached beyond the purview of the Compact to support the radiological rehabilitation efforts of Enewetak, Bikini, and Rongelap. As I have said previously, monies generated by trust funds for cleanup are an essential element to the recovery process for these atolls. However, several outstanding issues must be addressed before this recovery process can move forward.

First and foremost, the RMI Government is concerned for the welfare of Marshallese citizens involved in cleanup efforts. Past experience with rehabilitation and resettlement projects on Enewetak, Bikini and Rongelap have all proved the same point: a safety inspection mechanism must be in place to ensure against radiation exposure. In Enewetak, in Bikini, and now in Rongelap we have been forced to rely on the word of DOE and U.S. contractors that specifications for safety have been followed to the letter. The RMI Government cannot afford to rely on the word of those who have time and time again been proven wrong. Therefore, we need independent experts who can conduct reliable inspections of the cleanup sites. Only in this way can we assure our citizens of their safety.

Part and parcel of this concern for safety is the need for both the RMI and the U.S. Governments to arrive at an agreed upon cleanup standard for radioactively contaminated lands. The U.S. Environment Protection Agency has set a 15 millirem cleanup standard

for the 23 nuclear weapons development and production facilities located in the United States. Based on EPA's expertise, the Nuclear Claims Tribunal has adopted this same standard in its deliberations of land claims cases. The RMI Government asks only that its lands be cleaned up to the same standard as U.S. lands. Certainly, Marshallese citizens deserve the same measure of protection from harm as United States citizens.

The costs entailed in the provision of these protective measures certainly add to the cost of cleanup. However, what cannot be forgotten is that, protection or no, the cost for cleanup greatly exceeds the monies provided for the accomplishment of the same. While the US specifically accepted responsibility in the Section 177 Agreement for "compensation owing . . . for loss or damage to property...resulting from the nuclear testing program," Section 177 funds have proven manifestly inadequate to cover property loss or damage. Enewetak alone estimates that the cost to rehabilitate the radioactively contaminated northern islands in the atoll will cost in the neighborhood of $160 million dollars. When this figure is quoted for just one atoll, the inadequacy of the $150 million provided for in Section 177 becomes clear. As you will hear in later testimony, the Nuclear Claims Tribunal lacks the funds to pay awards for land claim cases presented by the four atolls. Thus, until it acquires the necessary funding for these awards, the Tribunal cannot fulfill its mandate is to render "final determination upon all claims . . . in any way related to the Nuclear Testing Program."

As alluded to previously, Congress has appropriated monies since the Compact went into effect for cleanup in Enewetak, Bikini and Rongelap. Again, these trust fund monies have proven to be an essential element in the restoration process. However, I ask you to note that in each and every case, the money appropriated by Congress did not take into account the costs of complete cleanup and restoration. Bikini provides a perfect example. The $90 million dollar community trust fund accounts only for the cleanup of Bikini and Eneu, just two of Bikini Atoll's 23 islands. And yet, without access to the resources on every single island in the atoll, the Bikinians could not live a healthy or self-sufficient lifestyle in their home.

I would like to make one final point regarding cleanup costs. Oftentimes, when figures are quoted in terms of appropriations already made and costs still outstanding, the price tag for recovery and restoration appears staggering. However, when you compare these costs with the price the United States is paying to clean up its own nuclear weapons testing sites, the RMI figures are extremely moderate. For the last three years, Congress has appropriated an average of $5.75 billion dollars a year for the Department of Energy's Environmental Management program which is charged with the cleanup of 23 nuclear weapons development and production facilities in the US. In that time, over $10 billion has been spent on one site alone - Hanford - without removing the smallest particle of contaminated soil. It is estimated that the total cost of the program will be $147 billion. Compared to these billions, the millions sorely needed for cleanup in the RMI are both modest and reasonable.

**Resettlement**
As communities engage in cleanup activities and prepare to resettle, I would like to remind the Committee that resettlement cannot translate automatically into self-sufficient, healthy communities. Resettlement brings with it a new set of needs as returning communities--unaccustomed to life in their own homes because of their long absence--attempt to yet again to build a new life. The land will have to be re-learned, homes re-built, skills re-taught, schools re-formed, and community ties re-enforced.

Currently engaged in resettlement activities, Rongelap is faced with these issues. Phase I of their Resettlement Program addresses several of the needs I have mentioned. They are building basic infrastructure: airport runway, dock, hospital dispensary, power plant, etc. They have a dependable water supply. The village lines have been drawn. But, a host of questions remain. Who determines whether or not Rongelap, after the rehabilitation project, is actually safe? If it is determined to be safe by a RMI led inspection team, will the Rongelapese choose to resettle? What will life be like in Rongelap especially given the incomplete nature of the cleanup project? The $40 million they have received for restoration and resettlement only covers the cost to clean up one part of one island. How will the generation of children who have literally grown up and away from the atoll be reassimilated into an outer island lifestyle? The community will have to answer these questions once the project enters its second phase. The stronger their resource base, the more assurance they have regarding environmental safety, the more options for growth they are given, the better able they will be to answer these questions. If, however, needed resources are pulled from resettlement projects, the constraint on community choices makes the restoration process that much more difficult. Thus, the RMI Government supports Rongelap's request that the $5.3 million deducted from the original Congressional appropriation of $40 million be added to the Rongelap Resettlement Trust Fund. Like Bikini and Enewetak, Rongelap has a proven track record of wise management of this resource base. With it, these atolls can make resettlement a central element in their overall program of recovery.

Mr. Chairman, now that I have addressed some of the overall issues that impact the four atolls, permit me to focus my discussion more closely on the individual communities themselves. Although certain themes thread through any discussion of the four atolls, it would be a mistake to lose sight of the very real differences that define the experiences of Bikinians, Enewetakese, Rongelapese and Utrikese since the tests. Where were they then, where are they now, and where do they hope to be--these are the type of questions that will frame my story of each atoll community. I hope in this way to convey some of the details that are missing from my general overview.

For additional detail, I direct your attention to the statements submitted for the record by the Bikini, Enewetak, Rongelap and Utrik delegations. In my discussion, I will summarize in brief each of these statements in addition to providing information of the situation of the four atoll communities today.

**Enewetak**

After 33 years of exile on Ujelang, the Enewetakese began returning home to the southern islands of Enewetak in 1980. The cleanup process involved scraping topsoil in the areas to be resettled. The contaminated soil was dumped into a bomb crater left from the testing period and then covered with cement. The result was Runit Dome, a structure that sits beside the re-inhabited islands of the Enewetakese. Whether or not the radioactive materials contained in this dome are leeching into the surrounding environment and affecting the health of the people is unknown. The Enewetakese do not have access to the resources or expertise to monitor the structure. If indeed this nuclear waste storage structure presents a radiation exposure hazard to the people, the RMI Government and not the US Government who built this structure will have to bear the ensuing burdens.

I would like to stress the extreme hardship suffered by the Enewetak people not only during their stay on Ujelang but since they have been resettled in Enewetak. Indeed, I believe the Enewetak case illustrates the very difficulties that I have previously mentioned in relation to resettlement. While the people of Enewetak certainly have returned home, they have by no means had their home restored to the condition in which they left it. Scraping topsoil from the southern islands literally stripped the land bare of its productive capacity. Simply growing food for survival becomes a nearly impossible feat. Products on the northern islands offer the islanders no recourse since these islands remain contaminated. Essentially, the Enewetakese have lost their ability to live a self-sufficient, Marshallese lifestyle. The psychological stress entailed in this loss makes life on the "New Enewetak" a daily struggle.

In spite of these continuing burdens, the Enewetak community have effected notable successes since resettlement. As I indicated earlier, trust fund monies have enabled the community to make a strong commitment to education. Whereas few Enewetak students passed the national high school entrance exam in the past, nearly all Enewetakese eighth graders can now move on to high school. The food and agriculture provisions of Section 177 have also proved particularly helpful because of the inability to grow adequate food crops for local consumption. There is also the added constraint that food from the northern islands remains off limits. Until such time as these islands have been cleaned of lingering radiation, the support of these programs will be needed.

The people of Enewetak want the northern islands cleaned. In an extremely constrained atoll ecosystem, access to all available resources is critical to survival. Self-sufficient living is impossible without this access. Therefore, Enewetak has brought their land claims case before the Nuclear Claims Tribunal. Case estimates put the price tag for cleaning, restoring and resettling the northern islands at $160 million. This figure does not include the estimates put forward for loss of use of the land and consequential damages suffered as a result of the testing program. Yes, the costs do add up. However, this is the price that needs to be paid now to restore a sense of self-sufficiency.

**Rongelap**

86 members of the Rongelap community living on the atolls of Aliniginae and Rongelap at the time of the Bravo shot were identified as having been acutely exposed to radiation. These Rongelapese were removed from their home in 1954. Three years later, they were resettled on Rongelap along with other members of the community despite the continued risk of radiation in the environment. In the years that followed the community experienced alarming changes in their health and environment that the U.S. doctors and scientists who visited the island could not adequately explain to them. For the first time, eating staple foods such as arrowroot caused their mouths to blister. Babies described as looking like "jelly fish" and "grapes" were born. More and more people in the community, including those who were not in the "acutely exposed" group but had moved back for the first time in 1957, suffered from mysterious illnesses, oftentimes cancers. When the gap between incidents and information finally began to close and the community began to comprehend the risk from their environment, they decided to evacuate. Thus, in 1985 they moved to Mejatto, an isolated island in Kwajalein Atoll. In 1995, a full ten years later, the U.S. finally determined what the Rongelapese had suspected all along: Rongelap could not be safely resettled without radiological rehabilitation.

If Rongelap was contaminated in 1995, imagine how dangerously contaminated it must have been in 1957. And yet, Mr. Chairman, the U.S. Department of Energy refuses to acknowledge to that Rongelapese who moved back in 1957 suffered internal exposure to radiation. Thus, Rongelapese in the 1957 group who experience exactly the same set of medical conditions as those who were exposed to actual fallout are not eligible for DOE medical care. The burden of care for these Rongelapese has thus been shifted to the underfunded 177 health care program and the already overtaxed RMI public heath care system. Until the Rongelapese have access to the health care assistance that they deserve, they cannot begin to care for themselves in even the most basic sense.

As I stated previously, the Rongelap Atoll Local Government has been pushing forward with a rehabilitation and resettlement program that reflects the various implementing agreements signed to that end since 1992. I would like to reiterate Rongelap's request for the $5.3 million deducted from the total sum authorized by Congress at this time. The importance of this request becomes apparent when you consider the following points. First, the estimated cost of the resettlement program for Rongelap Island is double the amount appropriated by Congress which means that the balance must be made up through the prudent management of the trust fund corpus. Second, Rongelap is drawing down assets faster than expected in the effort to work closely with the RMI government to support the medical and environmental monitoring measures that must be in place to ensure the safety of workers currently residing in Rongelap as well as those who may eventually return.

Rebuilding Rongelapese trust in their environment and the people who monitor it and them after the years of misinformation and mystery will take time and education. Too

often, the Rongelapese have either been forced to make their decisions in the dark or deprived of their right to decide altogether. An extreme example of this would be the experiment wherein Rongelapese were injected with radioactive elements without their knowledge much less informed consent. In light of this history, the ability to make meaningful and informed decisions about their future becomes central to the community's recovery from victimization. The decision to resettle will be left to a later date when more is known about the environmental safety of a rehabilitated Rongelap. Until the Rongelapese can be assured that it is safe to return, they will continue to make a life for themselves elsewhere. Whether they live in the isolation of Mejatto, crowded Ebeye conditions, or the capitol of Majuro, their years away from home have profoundly changed their community.

**Utrik**

The Utrikese were also resettled in an environment with lingering radiation. Please note that the people of Utrik were returned to their island just three months after the Bravo test of 1954. They remained there for the rest of the testing period and have continued living on the atoll in the years since. Thus, Utrikese concern focuses on the chronic exposure to radiation that members of their community have suffered as a result of living in a radioactively contaminated environment day in and day out for years.

Indeed, recently declassified DOE documents disclose that in 1956 an Advisory Committee to the US Atomic Energy Commission described Utrik as by "by far the most contaminated place in the world." This was a full two years after the Utrikese has been resettled in their home atoll. As in the case of Rongelapese, the ensuing chronic exposure to radiation is of extreme concern. The community attributes their persistent health problems to the effects of this chronic internal exposure compounded with the external exposure received during the testing period. Just as one example, take the reproductive abnormalities that have skyrocketed in number since the 1950s. The numbers translate into even more frightening experiences. Groping for words to explain these new experiences, a Utrikese women states, "some women gave birth to creatures like cats, rats, and the insides of turtles--like intestines...most of the women had miscarriages, including myself who gave birth to things resembling grapes and other fruits."

While these problems affect members of the community who were not present on the day of the Bravo test, once again the DOE health care program limits its enrollment to the 168 who were present on March 1, 1954. Medical monitoring must be stepped up to allow for the internal exposure to radiation that people living on Utrik have experienced over time. The Utrik community requires a health program that is responsive to their needs over and above the needs of research scientists.

The discovery and disclosure of information regarding the effects of the testing program is critically important to the people of Utrik. I will briefly summarize what the community is looking for. First, the amount and types of radiation doses that Utrik was exposed to as a result of <u>all</u> 67 tests in the Marshalls, not just Bravo and other Castle series tests. Second, an independent risk assessment survey to determine just how

affected the people have been by the testing program. Finally, a medical monitoring and treatment program that is responsive to the questions and needs of its patients. Once again, informed decision making is part and parcel of the path to recovery from victimization.

Before I turn to the Bikinian situation, Mr. Chairman, I would like to relate to you a story that was shared with me by Mr. Joe Saul. Mayor Saul is among the select population identified as "exposed" to radiation on Utrik. He was present on March 1, 1954. When the community was returned to Utrik after three months of camp life on Kwajalein, they did not immediately disembark from the US Navy ship. They waited for days, anchored offshore, while the U.S. forces that transported them scoured the island for animals. These animals--primarily pigs and chickens--were a source of food for the islanders. When they finally disembarked, all these animals had been destroyed. Provided no explanation for this action and in need of food, the Utrikese hunted down animals on other islands in the atoll that had escaped the U.S. search. Mayor Saul said they ate the food without an inkling of the radiation they were ingesting into their bodies. They were never warned of any danger.

Today, the Utrikese are trying to make informed decisions about their physical, social and economic needs. Their decisions represent a significant step toward recovery from the legacy of the tests.

**Bikini**

The Bikinians left Bikini more than 53 years ago. While Kili is their home in exile, large communities of Bikinians also reside in Majuro and as far away as Enid, Oklahoma. Life for these different communities present many different sets of concerns. For those living on Kili, life is severely restricted. Whereas Bikini boasted a large lagoon encompassed by a total of 23 islands, Kili is a single island with neither lagoon nor additional land resources. The generations of Bikinians who have spent their lives away from Bikini have lost prized fishing and ocean-faring skills. Bikinians on the island of Ejit in Majuro and those living in the States face a host of displacement problems as well. Separated from the heart of the Bikinian community, these far flung members must make lives for themselves away from the support system of a closely knit Marshallese community.

In addition to the points I have raised earlier with regard to the Bikinians, there are a number of immediately pressing issues that face the people today. Like the Rongelapese, members of the community were prematurely resettled in 1972. The resettled families based their decision to return in part on a 1968 guarantee issued by President Lyndon Johnson that Bikini was safe. Before they return again, the Bikinians would like a similar guarantee. The track record with U.S. Government scientists has left no room for trust of their safety assessments. Lacking their own expertise and in the absence of independent scientists, they request a second guarantee.

Resettlement plans for the future are hindered by the lack of funding for a complete cleanup of the atoll. The $90 million Resettlement Trust Fund will only pay for cleanup

activities on the two islands. If and when resettlement becomes a reality, the Bikinians are committed to acceptable environmental safety standards for both workers and returning residents. With the proper safety measures in place, the RMI Government will wholeheartedly support any future resettlement activities in Bikini.

We would also like to take this opportunity to support the Bikinian's request for a 3% distribution from their Resettlement Trust Fund. In particular, the distribution will benefit Bikini elders who will most likely die on Kili because current resettlement funds cannot cover cleanup costs. Theirs is the saddest story. A 3% distribution cannot make them happier away from home but it may provide some comfort toward the end of their lives.

The wise management and use of trust monies is one of several successes in the Bikinian community. Perhaps you have heard, Mr. Chairman, of the world-class diving operation that has made Bikini a sought after dive spot in recent years. The operation was put together and is run with community support. In fact, as part of the program, Bikinians have been employed as trained divers and boat operators in the business. It is these initiatives that evidence the decision-making for the future in this as yet burdened community. It is these initiatives that will one day translate into some measure of self-sufficiency for a community who lost their natural resource base. It is these initiatives that show that the losses of the four atolls can be combated and compensated for when adequate support is provided to these communities.

In conclusion, Mr. Chairman, I would like to provide a brief summary of my comments:

- Self-sufficiency is our goal for the nation and for the four atolls.
- Contaminated environments and displacement from these environment burden the four atoll communities enormously as they struggle for self-sufficiency.
- The 177 Agreement provides a trust fund mechanism--successfully adopted and employed by the four atolls--that has allowed for progress toward self-sufficiency. Further progress and continued success depends on additional support since the $150 million has proved manifestly inadequate.
- Access to adequate resources and health care are essential compensation measures for communities that have either lost their land or lived in a contaminated environment. Therefore, support for the four atoll food and agriculture programs as well as an expansion of existing health care provisions is critical to recovery.
- Contaminated lands in the RMI need to be cleaned up to the same standard that is applied in the United States: 15 milllirems.
- Reliable radiological monitoring and a safety inspection mechanism is a prerequisite for resettlement.

Mr, Chairman, this summary cannot capture the complexities of the story that I set out to tell today. However, I hope it will highlight for you the concerns of the RMI Government and the four atoll communities as we work together to restore the self-sufficiency that was lost as a result of United States Nuclear Testing Program. While we still have a long way

to go in attaining our goal, with your support and the support of your colleagues in Congress we can build on the successful progress we have already made. Therefore, Mr. Chairman, on behalf of the RMI Government and the communities of Enewetak, Rongelap, Utrik and Bikini, I ask for your support.

*Kommol tata* and thank you for your kind attention.

Mr. YOUNG. I thank you, Marie, and you do notice that I have been letting you go over time, because anybody flies as far as you, you can have half the day if you want to.

Ms. MADDISON. Thank you, Mr. Chairman.

Mr. YOUNG. I am going to listen to Mr. Tony deBrum, Minister of Finance, Republic of Marshall Islands, and I am going to have to excuse myself. Mr. Doolittle will take over the Chair after I listen to your testimony, and then there will be some questions, as I have to go to another meeting. You are up.

**STATEMENT OF TONY A. deBRUM, MINISTER OF FINANCE, REPUBLIC OF THE MARSHALL ISLANDS**

Mr. TONY A. DEBRUM. Thank you, Mr. Chairman.

Mr. Chairman, I join the Foreign Minister in thanking you and the Committee for visiting with us. We thoroughly enjoyed the visit, and we hope you will be doing another one very, very soon.

I am going to concentrate my remarks on the inadequacies of the 177 program and probably some of the reasons why it is inadequate.

As you know, the Compact provisions for the nuclear problems, the 177 agreement was based on a study done by the Department of Energy called the 1978 Radiological Survey of the Northern Marshalls, which was presented to us as the definitive study on the full extent of damages in the Marshalls. Based on that, we agreed on the Compact and the subsidy agreement. Had we known what we know now about the full extent of the damages, I do not think we would have approved the Compact. I think for sure we would have had to have a radically different 177 agreement.

Since the 1994 hearings and since the Department of Energy released additional information previously classified, we have discovered to our satisfaction and we now conclude that information was withheld not only from us, from the Marshallese negotiators, but perhaps from the American negotiators as well, and certainly from Congress, because Congress would not have approved of this arrangement had it known the full extent of the damage. We are convinced of that now.

The definition of legally exposed people, that 174 people that were actually on island during the Bravo test, is also a very erroneous basis upon which to program the medical care. The reason for that is that people were exposed all over the Marshalls through 67 shots, not just to Bravo. The cumulative doses that can be calculated now backwards demonstrate that all the people of the Marshall Islands were exposed.

What happens is that you have a multimillion dollar program sponsored by Congress to deal with the so-called legally exposed 174 people, while the people surrounding those people are not eligible for the same care. They are tendered the 177 health program, which is much more poorly subsidized. The remaining population on the Marshalls must be taken care of by our government, which has even less resources to deal with the program—with the problems of medical and other monetary requirements. These all need to be expanded.

It has been alluded that all the classified information that we need to make even better judgments on what happened to us have been released. They have not. And you are right, Mr. Chairman, the onus is on the Department of Energy to present us with what really needs to be known. We don't know what is classified and what is not. They are the ones who know it, but what has been released has been most helpful and we continue to study them.

In fact, attached to my statement, which I hope will be in the record, if I didn't ask for it already, one of the attachments is a document we recently discovered that indicates that DOE was aware that there were a lot more problems, medical problems, including iodine-related thyroid problems in the rest of the Marshall Islands, and they were quite prepared to set up surgery arrangements for these people once the requirement was made by someone or once the administration agreed to include these people. When this was not included in the Compact, that plan was abandoned.

Included in that document is a very clear statement that shows that, that betrays really the research as opposed to the medical nature of the program that DOE conducted over these years. We are hopeful that more information can be provided so that we can be more informed as to what the true exposure levels of the Marshalls might be.

Included in my statement are the following requests to the Committee: One, that an ex gratia payment to supplement the Nuclear Claims Tribunal payments be made as soon as possible; that there be institutional and infrastructure support for the Republic of the Marshall Islands public health sector; that we seriously consider the expansion of eligibility for the DOE medical program to include more people, people that really, truly deserve it in the Marshalls; that there be an inflation adjustment for the four atoll health care programs; and that a directive be sent to the U.S. Public Health Service to provide resources, doctors, to the Marshall Islands. We are eligible for another Compact, but which we have found impossible to implement because of monetary requirements.

Six, we should begin training and education programs for Marshallese in the fields of environmental science and radiation health, in order to transfer this technology to people who need it most. We cannot continue to depend on outside doctors and outside expertise to take care of our own. We want to learn how to take care of our own. I think we can learn, too, if you can help us.

A directive to DOE should be sent to conclude an agreement on cleanup standards and worker safety standards that more closely match those standards that you set for American citizens. I think we deserve the same standard.

There should be a nationwide cancer registry program in the Marshalls. Right now, there are bits of information being put together from different studies conducted by different agencies over many years, but no one has actually put one of these registries together that would show the true extent of the cancer problem in the Marshalls.

We should also enjoy continued committee—your Committee, Mr. Chairman—representation at our annual DOE-RMI consultation. We think that is very important and is very helpful.

Finally and most importantly, prompt consideration of the RMI's changed circumstances petition which, as the Foreign Minister indicated, we will be submitting shortly.

I will be happy to answer questions. Thank you.

[The prepared statement of Mr. deBrum follows:]

**Statement to the House Resources Committee**
**H.E. Tony A. deBrum, Minister of Finance,**
**Republic of the Marshall Islands**
**Washington, D.C., May 11, 1999**

Chairman Young, Ranking Member Miller and distinguished Members of the House Resources Committee, it is an honor to appear before you today. I join Minister Phillip Muller in expressing my sincere gratitude to you, Mr. Chairman, for sponsoring this hearing and the Committee's demonstrated commitment to our bilateral relationship.

During previous hearings before this Committee, the RMI Government has brought Marshallese citizens to testify about the horrors, the pains, and the sufferings they endured as a result of their exposure to radiation from U.S. weapons. Oversight hearings regarding the Marshall Islands have also provided our government the opportunity to discuss nuclear issues as the relate to the RMI and its citizens. I think this Committee fully appreciates the anguish that the Marshallese people have experienced from both their exposure to radiation and their dislocation from their homelands.

What we have not fully explored is the range of problems caused by the testing program. It is not just external radiation exposure that creates problems for the Marshallese people. Therefore, I will focus my remarks today on the successes and failures of the radiation-related provisions in the Compact of Free Association, U.S. Public Law 99-239, and on the national impacts of the U.S. Nuclear Weapons Testing Program.

In order to consider the national impacts of the testing program, it is important to begin by examining the mechanisms and programs in place to help the target populations. The Compact of Free Association defines the types of programs and assistance available to Marshallese communities to address their health and environmental needs. Now that the Compact has been implemented for 13 years, we can consider the ways that Section 177, the section of the Compact pertaining to the Nuclear Testing Program, has succeeded and failed in its objectives.

## The Successes of Section 177

The U.S. Government by virtue of U.S. law, accepted responsibility for "...compensation owning to citizens of the Marshall Islands...for loss or damage to property and person...resulting from the nuclear testing program with the Government of the United States conducted..." (Section 177(a)). The U.S. Government also accepted

responsibility and liability for the consequences of all of the tests conducted from June 30, 1946 to August 18, 1958.

Ownership by the U.S. of this responsibility is the foundation upon which the RMI and the U.S. have structured the programs to justly compensate and address the problems resulting for the nuclear tests. The RMI Government and its citizens truly appreciate that the U.S. Government accepts culpability for the harm resulting from the testing program and are working in concert with the RMI to resolve these issues.

Allow me to elaborate on what the RMI views as the successes of Section 177.

**Establishment of 177 Health Program.** Congress approved a medical program for the "...people of the Atolls of Bikini, Enewetak, Rongelap, and Utrik who were affected by the consequences of the United States nuclear testing program" (Section 103(j)). This program, the 177 Health Care Program, provides $2 million a year to service the health care needs of these 4 communities. Section 103(j) of the Compact also requires the Department of Energy (DOE) to provide "...special medical care and logistical support...for the remaining 174 members of the population of Rongelap and Utrik who were exposed to radiation resulting from the 1954 United States thermonuclear 'Bravo' test..." (Section 103(j)). These monies are providing vital health services to some of the victims of the nuclear tests.

**Nuclear Claims Tribunal.** Section 177 established the independent Nuclear Claims Tribunal and provides for its funding. Congress made $45.75 million available to the Tribunal "...as necessary or partial payment of monetary award..." (177 Agreement, emphasis added). The RMI Government believes that the Tribunal is an appropriate mechanism for providing compensation to individuals and communities whose health and property have been compromised as a result of exposure to radiation. The Chairman of the Nuclear Claims Tribunal will expound on the Tribunal and its activities in his statement.

**U.S. Commitment to Safe Resettlement.** Congress generously supports the activities necessary to monitor and restore contaminated islands to they can be safely inhabited. This is an important commitment to the communities that have been dislocated for decades. These communities must have the opportunity to reside safely on their homelands or to determine their best alternative. The RMI Government appreciates the U.S. Government's willingness to provide financial and scientific resources intended to help reduce radiation levels on contaminated islands and the food chain the people depend on for survival. The RMI Government also believes that the community trust fund approach is the best way to allow the communities to increase their decision-making capacity and self-sufficiency.

**USDA Food and Agriculture Program.** The food and agriculture provisions of Section 177 have been very successful. These programs have assisted communities that live with persistent radiation in their environment and food chain. United States Department of

Agriculture support is particularly helpful for communities that either lack the topsoil to grow local foods because the soil was scraped off and removed during clean-up efforts and communities that are forced to live on land that does not belong to them. In most areas where the displaced communities reside, people moved to much smaller parcels of land that are unable to provide sufficient levels of local foods.

**Changed Circumstances.** Article IX of the 177 Agreement, the changed circumstances provision, enables Congress to consider a petition from the RMI Government demonstrating that the initial terms of Section 177 are "manifestly inadequate." During the Compact negotiations, our governments recognized that they could not have known the full range of past, present and future consequences of the testing program. The changed circumstances provision was included to provide a legal mechanism for the RMI Government to present new and additional information about the testing program – information not known during the original Compact negotiations – to Congress. The RMI Government is in its final stages of completing its changed circumstances petition for Congress to consider.

Before I discuss the failures of Section 177, I want to make it absolutely clear that the RMI Government does not blame Congress for any of these failures. On the contrary, Congress and this Committee have repeatedly come to the assistance of the individuals and communities affected by the U.S. Nuclear Weapons Testing Program. Critical information, however, about the degree and range of radiation exposure from the tests, the number of communities exposed to radiation, and the extent of radiological illnesses that manifested in the Marshall Islands has been withheld, covered-up, or grossly underrepresented by the U.S. Department of Energy. As a result, both the U.S. Congress and the RMI Government have not been told the whole story. If this Committee and the RMI Government had known at the time of the Compact negotiations what we have learned now as a result of the DOE document declassification process, I am certain that Congress and the RMI would have negotiated a radically different agreement than we have today. Because information was withheld from RMI and Congress and covered up or misrepresented by DOE, our governments agreed to a grossly inadequate mechanism for responding to the problems from the testing program.

## Failures of Section 177

As I indicated earlier, the RMI Government applauds the United States Government for admitting that harm was done from the testing program and for providing assistance through the array of Section 177 and Compact programs to address these problems. There are, however, many shortcomings of the Compact's radiation-related provisions that I want to bring to your attention. I want to place particular emphasis on the ways that these failures place insurmountable burdens and demands on the RMI Government and the constitutionally mandated services provided to our people, including health care. The RMI Government simply does not have the means to provide public services for needs linked to the U.S. Nuclear Weapons Testing Program.

**Inaccurate Radiation Measurements and Definition.** While the United States Government takes responsibility for assisting the Marshallese people exposed to harmful amounts of radiation, a document[1] prepared by the Department of Energy prior to the Compact negotiations misrepresents the amount of harm caused by the testing program. In this report, atolls are compared on a scale ranging from "the largest amount of radioactive atoms" to "the least amount of radioactive atoms" (DOE 1982:9). Atolls such as Mejit, Ailuk, Likiep, Wotho, and Ujelang fall into the category of "the least amount of radioactive atoms." As a result, they are disregarded in any medical care or environmental monitoring programs in the Compact. What I would like to make clear is that "the least amount of radioactive atoms" in the Marshall Islands exceeds acceptable radiation exposure levels in the United States hundreds of times. The radiation that these atolls excluded from U.S. programmatic consideration received reaches as high as 6,240 mrem from only one test series,[2] the Castle series [**Attachment I**]. For comparative purposes, while Ailuk Atoll received 6,240 mrems of exposure from just one test series, that is an exposure level about 250 times acceptable standards of radiation exposure for the general public in the United States. I fail to understand how DOE's survey of atolls in the RMI can categorize atolls with a radiation exposure level of 250 times the standard for the U.S. general public as the "least amount of radioactive atoms."

While these radiation levels might be the least amount found in the Marshall Islands, 250 times U.S. standards for exposure should certainly qualify these atolls for inclusion in medical and environmental programs. The Compact only provides programs and assistance to people in the communities which the DOE identified in 1954 as acutely exposed to radiation. The RMI Government is forced to care for the radiation-related needs of all atoll communities beyond the two ground-zero locations of the testing program and two of the communities that experienced fallout from Bravo. I want to make it very clear that the RMI Government recognizes that the "four atolls" were acutely exposed to radiation, and therefore, deserve and require assistance. Yet, the RMI Government is forced to provide for multiple communities that radiation exposure levels that are dangerous to human and environmental health. It is imperative to monitor the environment, especially the food chain, and the health of all the effected atolls. We cannot provide for the needs of these exposed communities if we do not know the extent of their exposure through diligent monitoring.

**DOE Medical Program.** When it came time to construct medical programs to respond to the health care needs of people affected by the testing program, DOE's survey of the northern atolls – a study they claim represents the "best effort" of the U.S. Government "...to evaluate and describe radiological conditions in the Marshall Islands" (Article VIII, 177 Agreement) – was apparently utilized for determining eligibility to participate in these programs. The DOE medical program, a program that Congress generously provides almost $2 million annually, is limited to 174 people. These 174 people represent the acutely exposed people from Rongelap and Utirik, as defined by DOE.

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[1] 1982. The Meaning of Radiation for Those Atolls in the Northern Part of the Marshall Islands That Were Surveyed in 1978. U.S. Department of Energy: Washington, D.C.
[2] 1997. Annual Report to the Nitijela For the Calendar Year 1997. Nuclear Claims Tribunal: Majuro, p.24.

What I find impossible to reconcile is that Congress takes responsibility for the damage resulting from the entire testing program, but when it comes time to provide quality medical care to affected atolls, eligibility to participate is limited to exposure from just one test, the Bravo test. Care is not based on cumulative exposure from the testing program. At 15 megatons, Bravo was the largest thermonuclear test ever conducted by the United States Government. But, there were an additional 93 megatons of tests conducted in the Marshall Islands beyond the Bravo test. **Bravo represents about 1/7th of the megatonage tested in the RMI, but 100% of the criteria for inclusion in DOE's medical program.**

Radioactive fallout from these tests exposed every island in our nation to radiation. In fact, radioactive fallout and tracer chemicals from these tests spread to every corner of the Marshall Islands, throughout the Pacific region, across the United States, and into the stratosphere. Yet, Mr. Chairman, DOE's medical program states that radiation from only one of these tests, the Bravo test, affected the health of just 174 Marshallese citizens. Furthermore, DOE sponsored medical and environmental programs focus exclusively on high levels of radiation exposure and on current levels of radiation exposure. DOE fails to consider the environmental and human safety issues for other atoll environments and people exposed to mid or even low levels of exposure that we know are harmful.

In terms of medical programs, DOE's ability to impose narrow parameters on radiation exposure meant that Congress and the RMI Government were told that only 174 Marshallese people were exposed to harmful levels of radiation from the U.S. Nuclear Weapons Testing Program. This number represents the number of people living on Rongelap and Utirik on March 1, 1954 who were exposed to extremely high levels of radiation from the Bravo test. These populations, including their so called unexposed members, were evacuated and enrolled in an experimental program to study the effects of radiation on human health. I won't discuss the outrage and humiliation of the people for being forced into medical experiments designed to benefit scientists not the patients because after years of this practice, DOE finally agreed to terminate the medical program run by a U.S. weapons laboratory.

Instead, let me tell you who this Compact definition of "exposed" does not include, and therefore, does not entitle them to participate in DOE's multi-million dollar program funded by Congress:

1. The Marshallese test site workers who supported the testing and clean-up activities on Enewetak and Bikini, including the most dangerous type activities, such as ground-moving activities that resuspends plutonium in the air. The Marshallese workers had no protective clothing or occupational safety guidelines. The workers and their families ate the food and drank the water on the ground-zero atolls during the years that the islands were strictly off-limits for human habitation.

2. The people of Bikini, Enewetak and Rongelap who were prematurely resettled on their homelands but later taken off of their land because of recognition of the fact that they received dangerously high levels of exposure to radiation. In the case of the Rongelapese and the Bikinians, these populations ingested dangerous amounts of radiation from their local environment.

3. This group also includes the Rongelapese "control" group that returned in Rongelap in 1957 along with the Rongelapese exposed to external fallout from the Bravo test in 1954. Department of Energy documents provided to Congress and the RMI Government insist that people resettled on Rongelap from 1957-1985 are "unexposed" to radiation, and therefore serve as a fair Marshallese control population with normal incidence of radiation-related illnesses to the incidence level in the Rongelapese exposed in 1954. Additional cases of statistical manipulation are found in recently released DOE reports.

   We all know Rongelap was highly contaminated in 1957. If Rongelap is still too radioactive for the community to resettle today, in 1999, without remediation, one can only imagine how contaminated it was when the people were resettled prematurely in 1957. In addition to the Bravo test, Rongelap received radioactive fallout from other tests in the Castle series, as well as tests conducted in 1956-1958. There is no wonder that the people who resettled Rongelap while it was highly contaminated began to display similar health conditions as those exposed in 1954. Mr. Chairman, it is an outrage and it is highly offensive to the Marshallese people that DOE continues to misrepresent the effects of radiation to Congress and the RMI Government. We know that the entire basis for the statistics and information that is presented to this Committee and the RMI Government is based on a faulty comparison group.

   At the annual meetings between RMI and DOE, the RMI Government vigorously protests the use of the term "unexposed" in DOE medical summaries. Mr. Chairman, I implore this Committee to recognize that for decades you have received reports on the status of the health of the Marshallese based on a faulty control group. Because the people resettled on Rongelap in 1957 began to exhibit the same kinds of illnesses as the people exposed in 1954, DOE maintains that this demonstrates that the people exposed in 1954 are not experiencing unusual levels of radiation injury.

4. The people of Ailuk, Likiep, Mejit, Wotje, Wotho, Ujae and Ujelang who received levels of radiation in the vicinity of the people from Utirik. It is entirely appropriate for the people of Utirik to be included in the DOE medical program. The unexpectedly high incidence of thyroid dysfunction in the community is just one of the health problems suffered by the community. Yet, communities with similar levels of exposure are excluded even in the face of extremely alarming health problems.

5. The children of the prematurely resettled communities whose parents were exposed to radiation and who were born into highly radioactive environments. It is particularly

difficult for the small bodies of children living in radioactive environments to handle the body burden of radiation exposure.

6. Any secondary illness in the 174 acutely exposed Marshallese. While the DOE program treats the radiation illnesses directly linked to their exposure, it does not treat the indirect or secondary illnesses. Therefore, if an acutely exposed individual from Rongelap or Utirik has any health problems resulting from radiation exposure, such as problems resulting from the weakening of the immune system, the patient will be "ping-ponged" to another program. I pursposefully use the phrase "ping-ponged" because Marshallese radiation victims frequently use the term to refer to how they are "ping-ponged" back and forth between programs and doctors with no central coordination of their medical needs.

The sad part about the exclusion of these people from DOE's medical program is that DOE and its contractors expected that there would be a high level of radiogenic illnesses in the prematurely resettled communities and the communities adjacent to Utirik, such as Ailuk, Mejit, Wotje and Likiep. **DOE and its contractors even went as far as to arrange with medical facilities in the United States to prepare for a high number of thyroid surgeries once the people prematurely resettled people of Bikini, Enewetak, and the people of Ailuk, Mejit, Wotje, and Likiep were included in the DOE medical program [Attachment II].**

I have to tell you that the burdens of providing for the health needs of these communities has been shifted to the RMI public health sector. The enormous expenses involved in providing for these people is beyond our means. Our health care system has not been able to refer patients who need care to Hawaii. We simply do not have the expertise or the financial resources to provide for these people.

**Inadequate Funding for Health Care of Victims.** I'm sorry to report that we are almost no closer today than we were at the beginning of our relationship to providing for the health care needs of our radiation victims. The RMI is in dire need of Marshallese health care and environmental science professionals. Despite the fact that we have some of the highest incidences of radiogenic illnesses and cancers in the world, we don't have adequate hospitals, diagnostic equipment or even a cancer registry program in the Marshall Islands. We are almost wholly reliant on the United States for radiation-related medical and diagnostic care as well as information about the effects of radiation on human health. This reliance does nothing to develop our ability to assess our own situation, to address our own needs or to work toward the mutual goal of self-reliance envisioned in the Compact.

Congress appropriates more than $6 million dollars annually to the Department of Energy to provide medical and environmental programs to a select group of people in the Marshall Islands. This is a sizable amount of money that, once again, demonstrates Congress' commitment to take responsibility for the problems resulting from the testing program. What I don't think Congress is aware of is that the largest amount of this

money appropriated to DOE goes to logistical support. DOE spends more money on logistical support than it does on either the medical or environmental programs. When people are dying, when the hospitals are dilapidated, when Marshallese are anxious to study relevant subjects in school, I fail to understand why the logistics contractor of the Department of Energy receives a larger portion of Congress' money than the medical or environmental programs.

In the case of the environmental program, I don't understand why money is spent to fly researchers and environmental samples between the Marshall Islands and Lawrence Livermore National Laboratory. With multi-million dollar annual appropriations, it seems to me that a laboratory could have been built in the Marshall Islands, and Marshallese students could have been trained so the logistics contractor wouldn't have to pay to fly weapons laboratory researchers and environmental samples to and from California. Technology transfer should be an important component of any programs.

The RMI Government regards DOE's use of a weapons laboratory to conduct environmental monitoring as an insulting conflict of interest. At radiation-contaminated sites in the United States, private industry monitors the ecological contamination of the areas. We still have the fox guarding the hen house in the Marshall Islands. DOE enables the weapons laboratory to continue to make wholly irrelevant and insulting comparisons between external, background levels of gamma radiation in the United States, and internal, alpha radiation exposure in the Marshall Islands. It seems to me that we can find better assistance than a weapons laboratory contractor that fails to distinguish between solar radiation exposure and organ and bone concentrators from ingestion of radiation.

**Funding for the Nuclear Claims Tribunal.** The funding allocated to the Nuclear Claims Tribunal, as stated by Chairman deBrum, is not adequate. While we are fortunate to have a mechanism to compensate individuals for their illnesses, the amount is insufficient. There have been far more cases of radiogenic illnesses presented to the Tribunal than either or our nations were prepared for when we originally negotiated the Compact. Many radiation-related illnesses are latent for decades and are just now beginning to appear in the population.

Sadly, many Marshallese people are dying from radiation-related illnesses without the compensation owed to them. Family members lack the financial resources to provide the comfort or companionship that dying family members need. This is particularly disturbing for our elderly Marshallese, those who were alive during the testing program. In the case of the United States, radiation victims in the United States receive one-time payments when they are compensated for radiogenic illnesses.

**Resettlement Efforts.** The RMI national government is concerned about communities resettling islands that have been compromised by the testing program. While we recognize that there are a host of problems for communities displaced by the testing

program, the RMI Government cannot in good conscience continue resettling communities on islands where radiation problems have not been honestly defined.

One of the RMI Government's primary concerns is the health and safety of its people. I am deeply troubled by the fact that there are absolutely no worker safety standards in place for Marshallese workers involved in clean-up projects. This is true for the workers involved in the clean-up and restoration of Bikini and Enewetak, and this is true for the workers currently involved in the restoration of Rongelap Atoll. Mr. Chairman, we do not want to expand our problem. We do not want more radiation illness. We do not want to repeat a situation where people are exposed to radiation. The RMI Government does not have expertise on occupational safety for radiation workers. If we cannot establish worker safety measures for Marshallese workers the RMI Government will have to stop all resettlement activities. We want to help restore contaminated lands, but we cannot accept a situation where the health of our people is compromised in the process. The burden to provide for the health care of Marshallese radiation workers falls on the RMI national government.

Another factor that increases our concerns about communities preparing to resettle is our history with resettlement. The Bikinians were resettled prematurely. The Rongelapese were resettled prematurely. The health of these communities was adversely affected by the mistaken decision to return. The burden of providing health care to these communities falls on the 4 atoll health care program that is grossly underfunded and unable to respond to the medical needs of these communities.

Furthermore, the United States and RMI Governments still have not agreed on an acceptable standard for clean-up in the Marshall Islands. The Nuclear Claims Tribunal has adopted a clean-up standard of 15mrem based on the U.S. Environmental Protection Agencies proposed standard that Mr. Allan Richardson will address in his testimony. The RMI Government wants parity with the United States. We are asking for clean-up to a standard that is considered safe for American citizens. Right now, clean-up and restoration activities are taking place on Rongelap, but clean-up to what level? We need to determine what standards will be put in place and who will be in charge of policing them. We are in danger of repeating the same mistakes of Bikini, Enewetak, and Rongelap (in 1957) with our current Rongelap resettlement effort.

**Section 177 Health Care Program.** The Section 177 Health Care Program for the 4 atolls and referals from the Tribunal is inadequate for the needs of the community. Section 177 establishes a four atoll health care program "for services to the people of the Atolls of Bikini, Enewetak, Rongelap, and Utrik who were affected by the consequences of the United States nuclear testing program...and their descendants" (Section 103(j)). There are those in the U.S. Government that criticize the Marshall Islands for failing to establish eligibility criteria for the 4 atoll health care program. I submit to you, Mr. Chairman, that it hard to perceive of anyone from the 4 atolls not "affected by the consequences" of the testing program. Anyone with land rights on these atolls lacks the ability to eat local foods in the same quantities or to get access to local medicines that

enable them to take care of their own health. When DOE is severely restricted in its scope and when the Marshallese public health infrastructure is stretched beyond its capacity, it is no wonder that all of the people from the 4 atolls seek to enroll in the 4 atoll health care program.

In addition to a high enrollment rate, the 4 atoll health care program is ineffective because of inadequate funding. Unlike just about every program in the Compact, the 4 atoll health care program receives no inflation adjustment. The costs of health care have increased yearly since the Compact came into effect but the purchasing power of the $2 million annual appropriation has declined dramatically. Currently, the 177 Health Care Program budgets amounts to approximately $15 a patient per month.

The Compact also entitles the RMI Government to use the U.S. Public Health Service to bolster its health care sector. But, the Public Health Service has suffered from budget cuts and has told the RMI Government that it does not have the resources to place doctors in the Marshall Islands. Congress' intention for the Public Health Service to bolster the health care needs in the RMI is well-intended, but the RMI Government is unable to exercise this option.

**Monitoring/Research.** Simply put, the RMI Government lacks the resources to provide for independent experts and research. For decades, we have relied on the science provided primarily by DOE weapons laboratories. Those contractors investigate the issues they are interested in. The RMI Government is frustrated by its inability to provide the care or research that it deems necessary to people affected by the testing program. The Marshallese people know about the changes to their health and their land caused by the testing program, but DOE contractors spend time examining and promoting DOE, not Marshallese priorities.

For years, we have heard that our population is not large enough to be statistically relevant, and therefore, no research takes place. We have also heard that the problems we observe in the Marshall Islands do not occur in Japan or Chernobyl, and therefore, are not linked to the radiation. Yet, the Marshall Islands is the only place in the world where 67 atmospheric weapons tests were conducted. There is absolutely no comparison for the Marshallese exposures anywhere in the world. Therefore, the excuses for not undertaking relevant research or for taking the medical complaints of the people seriously are weak and baseless.

What can be done to respond to the shortcomings of the radiation-related provisions of the Compact?

Section 105c of the Compact enables Congress to provide continuing authorizations to the RMI for: "...completion of projects and fulfillment of commitments or obligations...health and education as a result of exceptional circumstances; ex gratia contributions for the populations of Bikini, Enewetak, Rongelap, and Utrik; and technical assistance and training in financial management, program administration, and maintenance of infrastructure" (Section 105(c)2). The RMI Government requests this

Committee's assistance and coordination with the Appropriations Committee to secure the continuing authorizations for assistance included in the Compact. In particular, the RMI Government requests the following:

1. A supplement ex gratia payment to the Nuclear Claims Tribunal, consistent with Section 105(c)2 of the Compact. As you will see in the statement of Chairman deBrum, it is important to make the full awards that the Compact envisions for personal and property damage.

2. Infrastructure and institutional support for the RMI public health sector. The RMI Government is in dire need of additional facilities, equipment, and trained personnel to address our public health needs.

3. Expansion of eligibility for the DOE medical program.

4. An inflation adjustment for the 4 atoll health care program.

5. A directive to the U.S. Public Health Service to provide doctors to the Marshall Islands.

6. Training and education programs in the fields of environmental science and radiation health. Education should start at an early age to prepare and encourage Marshallese students to pursue advanced degrees.

7. A directive to the Department of Energy to conclude a bilateral agreement on clean-up standards for resettlement and worker safety standards for Marshallese workers involved in clean-up activities. The clean-up standards should be equal to those used in the United States and monitored by an independent party.

8. A directive to the Department of Energy to put its environmental monitoring contractor in the RMI, Lawrence Livermore National Laboratory, out to bid.

9. A nationwide cancer registry program in the Marshall Islands.

10. Continued Committee representation at the annual meetings between DOE and the RMI. I think it is important for the Committee to understand why the RMI has problems with the selective interpretations of data and the suspect resettlement recommendations being advanced by DOE's weapons laboratory contractor.

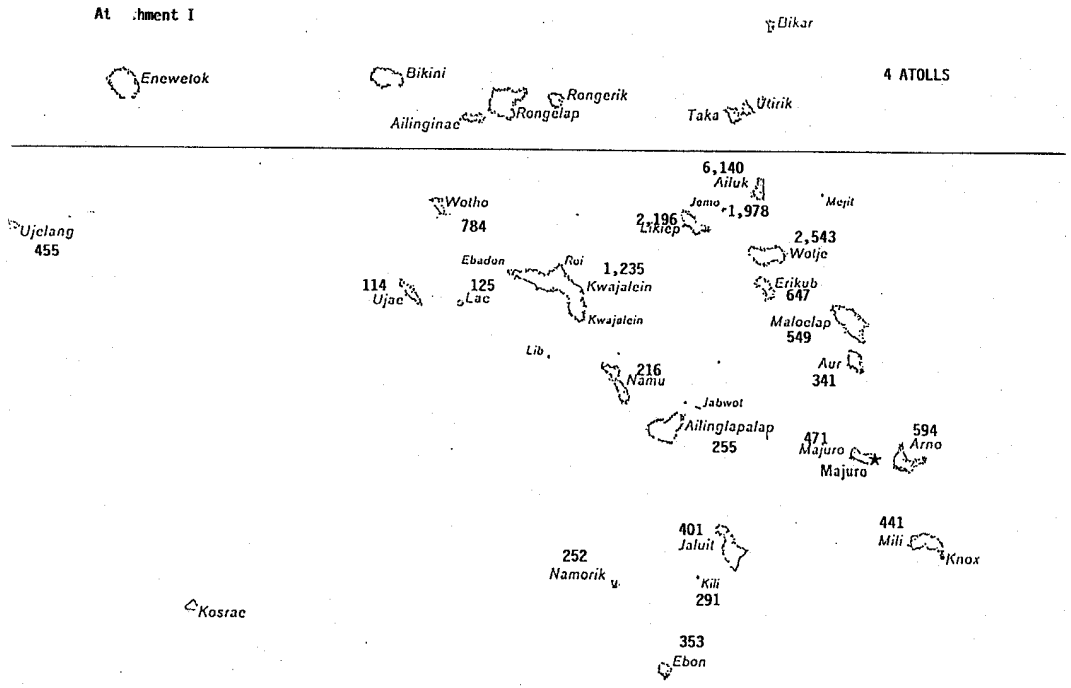
11. Finally, and most importantly, consider the changed circumstances petition of the RMI Government.

In conclusion, Mr. Chairman, as close, committed, strategic partners, I think it is important for us to attend to those Marshallese whose health and property were injured in our quest toward world peace and security. I know from your visits to the Marshall Islands and the support of this Committee that you understand and are committed to addressing U.S. responsibility for the consequences of the U.S. Nuclear Weapons Testing Program. Despite this Committee's support, I struggle daily with Administration officials whose main objective as we see it is to minimize U.S. expense for liabilities that U.S. law accepts. It is not in either of our nations' best interest to deny care to those who have suffered because of the testing program. These Administration officials don't recognize, that Congress approved the Compact as a means to address U.S. responsibility and moral obligation to the affected people. We all have to work together to address the lingering problems from the testing program.

People have said that everyone is the RMI is related. The nuclear legacy is a collective experience for the nation. There is not a single soul in the Marshall Islands whose life remains untouched by the U.S. Nuclear Weapons Testing Program. Every Marshallese citizen has lost a family member or friend who died from a radiogenic illness. We are frustrated by our inability to provide our own people with the medical care they need or the compensation they deserve. The RMI Government will not shirk its duties to provide care, but we must do it together.

Section 177 and the radiation-related provisions of the Compact fail to recognize the full extent of radiation injury to human beings and the environment. These failures have resulted because Congress and the RMI Government were not, and have not been told the full truth about the consequences of the testing program. I hope that we can begin today to establish a new road, a new way to address the full range of consequences from the U.S. Nuclear Weapons Testing Program.

At .hment I




CUMULATIVE RADIATION DOSES (mrem) BY ATOLL FROM OPERATION CASTLE

[U.S. EPA EXPOSURE GUIDELINE FOR THE GENERAL PUBLIC = 25mrem]

Attachm II

COMPARATIVE ANALYSIS OF THE TRADITIONAL (54 - 1978) BNL MEDICAL PROGRAM

AND REQUIRED REVISIONS IN LIGHT OF ACTUAL AND PROJECTED EXPANSION

410287

| TRADITIONAL CHARACTERISTICS | EXPANDED CHARACTERISTICS |
|---|---|
| 1. Directed toward early detection treatment, and prevention of radiation induced disease. | 1. Same |
| 2. Islands involved have included Rongelap, Alingnae, Rongerik and Utirik. | 2. Recent developments in 1978 and 1979 have opened the possibility that islands other than those designated in the traditional study may have received variable amounts of radiation, producing a wide spectrum of long term low level radiation of variable intensity. Recently obtained information from the papers of the USS Renshaw seem to indicate that on March 5-6, 1954 that there was a significant increase in background radiation at least on the island of Likiep (? 300mr/hr measured from the water of the cistern of the Catholic school. |
| 3. Populations under study have included:<br>a. 64 Rongelap - 175 R<br>4 in utero<br>b. 18 Alingnae - 69 R<br>c. 158 Utirik - 14 R | 3. The Secretary of State of the newly formed Marshall Island government, Mr. Anton deBrum states that as a child on Likiep at the time of the Bravo test on 3/1/54, he noted a particulate type of fallout. He remembers the visit of the Renshaw and states that a number of the people of the island underwent personal dosimetry at the time of the visit. He states he can remember the Geiber Muller counter clicking rapidly during the counting of the feet of many of the inhabitants being surveyed. During the ensuing 25 years, Mr. deBrum states he has noted a "very high" incidence of thyroid and congenital abnormalities in the people of Likiep. |
| 4. Rongelap received 175 R of gamma radiation; Alingnae received an unknown amount (approx. 69 R). Twenty-eight servicemen received an unknown amount on Rongerik; 158 people on Utirik received 14 R. In addition, all of these islands received an unknown amount of short-lived radio-nuclides - predominantly iodine. | 4. In 1970, Dr. R. A. Conard (then director of the BNL Marshall Island Study) visited Likiep and attempted to perform a complete survey of the island aimed at detecting the presence of thyroid nodules by palpation of all available inhabitants. During this survey 135 people were examined and 5 nodules were detected. Of the three major populated islands in the atoll, one was surveyed.<br>In 1977, a similar survey was carried out on Wotje. Two of the four inhabited islands in the atoll were visited. The visits to Likiep and Wotje were designed to determine the presence of palpable thyroid nodules in an "unexposed" population. Current data indicate that this population might in fact have had a higher than ambient radiation exposure. |
| 5. The exposed populations were evacuated in a period of 2-72 hours, to Kwajalein, where they were cared for by a team of radiation specialists from the AEC and other nuclear labs. Following an extensive medical and radiologic evaluation of the exposed population, an age-sex matched cohort was established for the people of Rongelap. No cohort was established for Utirik. The people of Utirik were returned to their island 3 months post-exposure; the people of Rongelap, 3 years post-exposure. Follow up | 5. The inhabitants of all islands other than Rongelap, Utirik, Alingnae and Rongerik have been reassured repeatedly that they have not been exposed to "significant" radiation. Recently, Mr. deBrum designed and circulated a medical questionaire to determine from a number of the people of Likiep and some surrounding atolls the prevalence of "thyroid" and "congenital" abnormalities since 1954. We have no solid information on the size of the population sampled. However, the survey has revealed an unusually high prevalence of "positive" results. The questionnaires have been completed by individuals and in many cases, by health care personnel. Interpretation of these questionnaires in their present format is impossible from an epidemiologic standpoint, however the questionnaires do raise the possibility of an unexpected incidence of the aforementioned diseases in Likiep. This information has been presented to US - Department of Interior and US - Department of Energy and assurances have been made to the Marshall Islands gov't. that a careful and scientifically valid |

studies were performed at 6 months, 1 year and annually for Rongelap. Initially, the Utirik people were seen every 3 years. The surveys have included careful monitoring of the hematopoetic system as well as the thyroid. The only death in the irradiated group due to radiation occurred in a Rongelap child exposed at 1 year who died of acute myelogenous leukemia; there have been about 50 deaths due to natural attrition. In those children exposed at less than age 1 (and the 4 in utero at Rongelap), over 90% have developed evidence of thyroid abnormalities, adenoma, carcinoma or biologic hypothyroidism.

5. New characteristics - in 1957, a "New control" (comparison) population was established due to the mobility of the cohort. This comparison population was closely related to the people of Rongelap and an at tempt was made to match for age-sex. As the program has evolved there have been significant changes in the comparison population and as of this date, there is a relatively poor fit between the experimental and comparison populations.

The population of Utirik has developed an unexpectedly high increase of cancer of the thyroid which is unexplained on the basis of their acute initial exposure to radiation. The question has been raised concerning the possibility of the long term effects of low levels of radiation present on both Rongelap and Utirik following the return of the inhabitants.

epidemiologic survey will be performed as soon as possible by an impartial group. If the survey reveals the possibility of an unusual prevalence of possibly radiation induced diseases, a full medical survey, based on the traditional medical surveys will be performed for the islands of Likiep and possibly for Wotje, Mejit and Ailuk as well.

Due to the absence of adequate vital statistics, particularly prior to 1954, but continuing to the present, meaningful analysis of observed/predicted cases of possibly radiation related pathology is almost impossible to obtain. Existing health statistics when reviewed by epidemiologists familiar with the biologic and pathologic patterns prevalent in the South Pacific detect unexpected discrepancies in the Marshallese population. A more direct indication of these differences has been presented by automated biochemical analysis performed on the traditional study population. Analysis of these profiles reveals that from 95-97% of the study group (exposed and comparison) have at least one and on most occasions, multiple biochemical levels that fall outside two standard deviations for comparable US values at certified research laboratories.

To the best of our knowledge, no sufficient data exists to establish adequate, age-sex, specific normative curves for each of these biochemical parameters.

6. Several unique sub-populations have emerged over the last several years. These populations were the original inhabitants of the islands selected as the test site for a long series of nuclear and thermonuclear devices; specifically the atolls of Bikini and Enewetak. In 1977, following extensive restoration and decontamination procedures, the island of Bikini was declared safe for reinhabitation. However, the returning population was cautioned about consuming certain borderline indiginous foods and in visiting other islands with higher background radiation levels. WBC was performed sequentially and in April, 1978 it was determined that the increment of elevation would place many of the individuals above the maximum permissible dose (determined by $Cs^{137}$ measured within the next year). It was therefore recommended that the population that had returned to Bikini Island (134 of approximately 600 Bikinians with land rights) would need to be repatriated to the island of Kili. The fact that this population had absorbed an unexpected amount of radiation albeit well within the maximum permissible levels has evoked a demand by this population for continued close radiologic and medical monitoring for an indeterminate period of time. We understand that on at least two occasions, statements before US Congressional committees have assured the people of Bikini of these services.

A comparable but somewhat different situation now exists for the people of Enewetak. A multi-million dollar decontamination and rehabilitation program has been undertaken by the U.S. Government over the last several years with the intent of rendering a significant portion of Enewetak Atoll habitable. The people of Enewetak were originally evacuated to Ujelang Atoll. Over the past several years, small groups of people from Enewetak have been returned to the atoll to assist in the rehabilitation. I understand these groups have been rotated periodically (about every 6 months). However, the majority of the work force on Enewetak has been US contract personnel. Careful radiologic monitoring of these workers has indicated no significant radiation risk. Next month (9/79), a major meeting will be held on Enewetak to present to the reps of the Enewetak people, the current radiation situation for those islands of the atoll certified safe for habitation. In addition, they will be provided with other significant radiologic data concerning a number of islands in the atoll that are still considered unsafe for habitation or food gathering. It is the recommendation of their legal counsel that the people of Enewetak on the basis of all on this information make the decision of returning to their home atoll on the basis of "informed consent"

Since the condition for return to Enewetak involve the voluntary restrictions of movement by the people among the islands of their atoll and prohibition of consuming specific foods from those areas the possibility of a situation developing analogous to that of Bikini exists. Because of this possibility the US - Department of Energy feels that it is mandatory that careful base line body burdens be obtained on all people returned to Enewetak and that this be done in conjunction with a careful medical examination. Subsequent WBC and medical examination will be necessary to detect any significant accumulation of radioactivity.

7. The study population now consists of the 244 originally exposed (minus the individuals lost to the study by death or dislocation) plus a group of 209 individuals in the comparison group.

Over the last 10 years, there has been an ever-expanding concern with primary care problems that have been detected in this population who have not been taken care of even after referral to the TT health care delivery system. The program has therefore become more and more enmeshed in primary care, diagnosis and treatment of conditions not thought to be related to radiation, i.e., diabetes and high blood pressure and severe dental disease. Both the field and the departmental directors of the program have realized that adequate screening for radiation related disease will detect this other group of health problems and pathologic conditions and that we are compelled by the lack of TT services to provide primary care. Consequently, with essentially level funding there has been a dilution of the research dollar.

7. In addition to the group outlined in the traditional program, the expansion of the program to include the following islands would increase the study population as follows:

| | | |
|---|---|---|
| 1. | Likiep | 400 + |
| 2. | Wotje | 400 + |
| 3. | Metjit | 300 + |
| 4. | Bikini | 6-800 |
| 5. | Enewetak | 4-500 |
| | TOTAL | 2100 + |

This population has received a variable amount of background radiation ranging from ambient to indeterminate low. If this population is included in the study group, a careful epidemiologic protocol will need to be provided to characterize the populations, identify the dependent and independent variables and consider the need for/or availability of a comparison population.

8. Staffing - for the last 24 years the full-time staff for this program has consisted of 1 full-time MD/director and 1-2 full time technicians. Over the last 6 years there have been intermittent resident physicians based in the Marshall Islands, however those physicians, with one notable exception, have frequently provided more problems that help to the PI.

8. Staffing - over the last year there have been major changes in the scope and responsibility of the Brookhaven National Laboratory medical program. For the last 2 years there has been an increasing perception of the critical role that communication (health and radiation education) plays in the delicate interface between the Marshallese and the US representatives. Within the lastsix months, concurrent with the establishment of a new Marshall Islands government there has been a concerted effort by all parties concerned to develop a highly integrated and cooperative effort to serve the medical needs of the Marshallese people. In line with this effort, and considering the projected increase in the study population, a position paper was developed by Brookhaven National Laboratory for US - Department of Energy in December 1978. Since that time, recent developments have necessitated a re-evaluation of personnel needs. The program has been without a resident physician in the island for six months and it is anticipated that a functional replacement will not be available for another six months. The annual surveys have been re-designed

Recently, a full-time Marshallese nurse-practioner has been added to the staff in the Marshalls and a technician previously based at Brookhaven National Laboratory has been transferred to the Marshall Islands. The remainder of the staff over this 25-year period have been volunteers recruited from leading medical centers and research centers throughout the U.S. They have most frequently been unpaid, highly qualified sub-specialists with a primary interest in the area of thyroid pathology.

Academic liason - the pattern of professional liason established over the preceding 25 years has been primarily on a 1:1 basis - using many of the country's outstanding researchers.

to balance the field survey staff so that the basic adult screening protocol can be o[illegible]ined in a five week survey, beginning in mid-January, including a staff of 14 professionals (4 MD's and 2 RN's).

Two and a half months later, a five week survey begins in mid-May, directed primarily toward pediatric care but designed also to follow-up on abnormal thyroid findings and to examine patients missed on the January survey. The staff is essentially the same with the substitution of a pediatrician for a thyroid specialist.

The third survey occurs two and one half months later in mid-September and concentrates primarily on delivering dental care and performing ancillary studies..., i.e., diabetes, etc. The staff is as before with the substitution of a dentist for the pediatrician.

The rapidly expanding character of this program has made it necessary to add the following positions:

1. Research Coordinator - since the principal investigator has been traveling 60% of the time since assuming direction of the program, and there has been a marked increase in the complexity of the program involving multiple governmental agencies and academic institutions, it is mandatory that some individual familiar with the intricacies of the program be available and resident at Brookhaven National Laboratory during the absence of the principal investigator. This individual should be supported by:

2. Secretary - since the vast majority of the staff will continue to be voluntary and in many cases, in a compensatory pay status, rapid hard copy communication and coordination is essential to the program.

In addition, the need for a full-time, highly qualified, innovative health educator has been identified. This request has come not only from all segments of the Marshallese people and government but also from the affiliated academic institutions and consultants. Since one of the primary criticisms repeatedly brought against the US Department of Energy program has been the lack of communication the present principal investigator feels that initially top priority should be given to developing a health education program designed:

1) to explain the role of each medical/radiation programs
2) discuss openly and freely radiation risks and to put them in an understandable cultural context and in turn to put those risks in relationship with the indigenous primary health risks.
3) such a program will necessitate the close integration and cross-cultural ties necessary to provide effective communication. The plan will be to develop a core of innovative health educators to train Marshallese from the affected atolls. These Marshallese will in turn, train a cadre of Marshallese. The goal of this program is to establish a fully competent and independent Marshallese training group using a Brookhaven National Laboratory health educator as a resource person.
4) with the incremental increase in the population under study (from 400 to 2000) and characteristics of the current logistic support system, i.e., at present the medical team is limited to 16 shipboard personnel who are able to examine approximatly 500 people in a 5 week period, it becomes obvious that multiple field teams must be developed and logistic support must be refined. The new liasons will therefore involve cooperative efforts with large academic and contractural centers who are able to mount and maintain major field surveys. It is the opinion of a number of experts in this field that the medical programs for the low level radiation groups be university based with a non-nuclear identity. Therefore we have contacted the dean of the medical shool at the University of Southern

California and the director of the division of community medicine who is a recognized expert in the epidemiology of cancer in the South Pacific. They have expressed an interest in further details of the short and long term goals of the program. In addition, we have discussed the possibility of academic affiliations for training in tropical medicine, family practice, field medicine, preventive medicine and for training of paramedical personnel, i.e., Medex, nurse-practitioners. In addition, since the new Marshall Islands Government is in the process of contracting with a Seventh Day Adventist Health Maintenance Organization, we visited Loma Linda University, the academic base for this group. In discussions with the dean of the medical school and the dean of the school of health, we emphasized our desire to establish a close cooperative effort in delivering primary care for the Marshallese. We inquired if Loma Linda University would be interested in an academic collaboration using faculty and staff on the field trips. They indicated interest in this suggestion and will present the concept to University administration. In addition, we had a preliminary meeting with Dr. Don Parlia (Professor of Pathology at UCLA) who is one of the senior consultants in the Marshall Islands Study and was actually present in the USN evacuation task force in 1954. He has remained in close association with the program throughout its 25 years and indicated he would be willing to discuss and additional cooperative effort between the Department of Energy, Brookhaven National Laboratory and UCLA.

With the potential expansion of the program and the concommitant identification of a significant number of potential thyroid surgical cases, it was felt advisable to begin a preliminary search for West Coast (So. CA) surgical units. Our present arrangements use the services of Brookhaven National Laboratory for medical work ups and evaluation and Case Western Reserve (Cleveland) for surgery. Because of severe climatic conditions this seriously limits the number of months during the year during which we are able to treat the Marshallese. A warm west coast facility would give us a great deal more flexibility.

Mr. YOUNG. I thank you. I have one. Who is going to be in the negotiating team on your behalf? Do you have any idea who is going to be set up?

Mr. MULLER. I will be, Mr. Chairman.

Mr. YOUNG. You will be. Very good.

Mr. MULLER. And a couple other members of our cabinet.

Mr. YOUNG. Mr. Muller, especially, and Marie, you made some suggestions which I deeply appreciate, because we are going to be directly involved with you in these negotiations or at least watching to see what happens as time goes by.

I happen to agree with you, Mr. Muller. I don't believe—because I was here when that Compact was signed. We did not have the information ourselves, and I am going to officially request that information be made available, because I can't figure out what in the world it is classified for now other than to protect someone's behind. There is certainly no military significance to what those tests did. That is pretty common knowledge that is being advanced by other countries now, so that information should be made available to you so you can analyze it.

But I am very much interested in your presentation and what we can apply it with, and as time goes by, Mr. Mansur has been directed and I am sure this young lady has also been on site, we will be watching this very closely.

With that, Mr. Doolittle, I hope you will conduct this meeting, and I thank you very much for your testimony. I will try to get back for the third panel.

Mr. DOOLITTLE. [presiding] Maybe I will just continue with and take my time now, serving as the acting chairman.

I understand that the RMI has passed laws affecting the awarding of nuclear claims by the Nuclear Claims Tribunal. Would one of you be able to identify those laws and describe their purpose and impact on the Nuclear Claims Tribunal?

Mr. TONY A. DEBRUM. Mr. Chairman, there is a Nuclear Claims Tribunal Act which was enacted by our parliament establishing the Nuclear Claims Tribunal, giving it the authority to do all those things that we agreed in the 177 Agreement with the United States that it must do in order to function. There are also cases where at the direction of cabinet, the parliament would also pass the necessary legislation to include certain conditions, for example, that the Veterans—United States Veterans Administration holds for their own people, photogenic diseases, conditions that are considered compensable, et cetera. I would hope that some of this more detailed information about those can be given when our tribunal chairman joins the next panel and gives you more information on that.

Mr. DOOLITTLE. That would be fine. Thank you.

Can you tell us what is the status of the nationwide radiological study, and could a copy be provided to the Committee?

Mr. MULLER. Mr. Chairman, we would be more than delighted to provide a copy of the study. We in the Marshall Islands had some concerns in the way that the study was done and the way that the information and data were collected, and we still continue to question some of the conclusions that the study had come up with, and we certainly will provide all of that to your Committee.

Mr. DOOLITTLE. Okay. Thank you.

For Secretary Maddison, you indicated that the Marshall Islands support the Bikini Island's request for 3 percent distribution from the trust fund. Has this request been raised to the administration, and do you know what is preventing the distribution?

Ms. MADDISON. Yes. According to the information that we have received, these arrangements have been made.

Mr. DOOLITTLE. I am sorry, the disbursement has been made?

Ms. MADDISON. The arrangement.

Mr. DOOLITTLE. The arrangement——

Ms. MADDISON. Yes.

Mr. DOOLITTLE. [continuing] to disburse the 3 percent has been made? Okay.

If I had had time, I would have asked the previous panel this question, but maybe one of you can tell me the answer. They were talking about how to get a commercial airline ticket into the Marshall Islands is like a 2- or 3-month waiting period. Is that what I heard?

Mr. TONY A. DEBRUM. That is right.

Mr. DOOLITTLE. And is that because airline service has been scaled back, or because there is some increased demand to go into the Marshall Islands or out of the Marshall Islands?

Mr. TONY A. DEBRUM. If I may answer that, Mr. Chairman, the service—the level of air service into the Marshalls now is half of what it was prior to the effective date of the Compact, 1986. We used to have four flights a week in from Guam and four flights in and out to Honolulu. It is now two. We have tried to get Aloha Airlines in Hawaii to provide a supplemental service and have agreed with them for this service, but had some difficulties with approval that Dr. Campbell indicated earlier this morning have all been granted, and would expect that service to start soon.

Mr. DOOLITTLE. Oh, good. Thank you.

The Chair recognizes the gentleman from American Samoa.

Mr. FALEOMAVAEGA. Thank you, Mr. Chairman.

I would like to say my welcome and thank you, and if I could repeat it in a very nice way, iakwe, kommol tata. To Mr. Muller and Mr. deBrum and Ms. Maddison, we are very happy that you are able to come and testify before this Committee, for which I am also happy that the chairman and the Ranking Member on this side of the aisle is very much interested in the problems affecting the people of the Marshall Islands.

Minister Muller, you had indicated in your testimony that there are basically two aspects of the whole negotiations process when your people negotiated this Compact with the U.S. Government. One, basically, our interest was strategic. It was not for the love of the Marshallese people. It was basically strategic, and the reason why the U.S. unilaterally declared the whole Micronesian area as a strategic trust, without even consulting the Trusteeship Council or anybody in the United Nations, we just went ahead and grabbed you guys and said you are now a part of the strategic trust of the United States.

You indicated you have some very serious problems in this equation. You have given the U.S. somewhat of a free hand in terms of maintaining or sustaining our strategic interests. What about

your economic development? What seems to be the biggest problem that you have? Is it lack of money? Is it lack of guidance? What seems to be the problem that you have encountered the last 13 years?

Mr. MULLER. Let me, Congressman, try to answer that question by saying first of all that the Compact agreement was entered into to benefit both of our countries, and as I say that in my testimony, we have lived up to all of our obligations under the Compact. At the same time, we feel that as the Compact comes to a close, the 15 years, there are a number of issues and provisions that have not been developed the way the administration expected.

Specifically, we are looking at section 111(b), which is a provision that was put in to replace the tax incentives that were originally agreed to, and this is the authorization of $20 million that would have helped in our economic development and economic programs. That has not materialized, only $2 million of that.

Essentially, health services has been allowed to lapse since September of 1998. We continue to ask that your Committee look into ways to reinstate the essential air services because, after all, air transportation is very important to the economic development of our country.

At the same time, we have got our own effort to move our economy forward. As I say in my testimony, we have introduced legislation to provide incentives to our local businesses to grow. We have lowered taxes. We have provided more transparent legislation that would allow for easier foreign investment to come into the Marshall Islands.

So, despite all of this, I think it is very important that before we commence negotiations on a new economic package, that some of these outstanding issues must be taken care of.

Mr. FALEOMAVAEGA. As you know, Mr. Muller, at the height of the Cold War we, or the government, the U.S. Government, decided as part of the negotiations in approving the Compact that the U.S. Government was to provide approximately $2 billion for a 15-year period, not just to the Marshall Islands but also for the Palau as well as for the Federated States of Micronesia.

It was about a year or two years ago, former U.S. Ambassador to the Marshalls, William Bodie, made a statement that we have failed to the extent that we have given to the Marshalls, I gather, too much money; that we have not done a good job in providing assistance, for whatever that assistance might be. Do you agree with Ambassador Bodie's observation about this?

Mr. MULLER. I totally do not agree with that, Congressman. First of all, let us remember that the bulk of that money that comes under the Compact is earmarked for radiation compensation to the four atolls and to land leases for Kwajalein Atoll. Only a certain percentage of that fund comes to the operation of government and for projects.

Second, when the government came into being, we entered an infrastructure that was really not there. There was no power, there was no road, there was no good health care system, no education system, and we needed to spend funding on some of those projects to bring up the level of infrastructure requirements for the people.

So I do not agree with that assessment.

Mr. FALEOMAVAEGA. Mr. Chairman, my time is up. I will wait for the next round.

Mr. DOOLITTLE. The Chair recognizes Dr. Christensen for her questions.

Mrs. CHRISTENSEN. Thank you, Mr. Chairman. I have two questions. I guess I would direct it to Mr. deBrum.

The first one, how much additional money is being requested to complete the compensation program, the $22.9 mllion?

Mr. TONY A. DEBRUM. Mr. Chairman, the $22.9 million cited in the petition filed by the Nuclear Claims Tribunal will only enable it to pay for current unpaid personal injury claims. It does not include any claims that are stemming from land damage or other damages that may be filed. We don't have that figure yet, and I think the government's position is that we all remain open to a later determination as to what that figure might be. But the immediate requirement, as I understand it, and the next tribunal will be here, the next panel, I understand that to be the figure, yes.

Mrs. CHRISTENSEN. Okay. I had a two-part question and you answered both parts.

Mr. TONY A. DEBRUM. Thanks.

Mrs. CHRISTENSEN. Thank you. Secretary Maddison, you talked about the types of difficulties that displacement causes, and in your statement, in your presentation you said that land is a lifeblood, and I suspect that you mean more than just that it provides food, that it must have some spiritual context, and could you elaborate on that for the record? What does the land have—what relationship is there between the land and the people?

Ms. MADDISON. Thank you, Congresswoman. We are trying to explain how important land is in the Marshall Islands. Land is very scarce, and yet it is the foundation where you pass on to your children your inheritance. But when I talk about difficulties, I am talking about everything that they have, the communities have to do, like for example the communities that were displaced, they have to relearn the land.

If the children do not know their land rights, they don't know their clans, it is very difficult for them to have identity, root, which is really very important. Unless they have their identity and they are well-rooted, they are self-confident, it is very difficult for them to move in any way, whether it is health, education. So they have to relearn the land.

They have to rebuild their homes, and homes and land are also very synonymous. Skills have to be taught because you are living in a different environment than when you were displaced. For example, you go from Rongelap to Najap. Well, Najap is a very far island within Kwajalein and it is very difficult to go to, very isolated in a way. Same as with the Bikinians when they were moved from an atoll to a small island which was surrounded by harsh conditions, big waves. So they have to learn new skills and how to fish, for example.

They also have to reform their schools. Building schools, that is another thing, and they are doing very well, for example, as I cited that—the example from Enewetak where they are spending their money to bring in teachers, to build schools, and the others are also setting aside money for scholarships.

But before they can even think of education, they have to think of basic needs. So, unless they have been able to manage their basic needs, then they can spend time on education, and they have to restore their community life. You have communities that are in different places. As I said, they are scattered in different parts of the Marshall Islands, even in parts of the United States. So how can you bring all these communities together? You have a saying that is, "out of sight, out of mind," which is very, very classic in this kind of example.

Mrs. CHRISTENSEN. I thank you, and I just wanted to thank you also for the kind hospitality that was extended to me and my husband when we visited, and it was really a pleasure to be there. I am glad I had an opportunity to come and visit and see the Marshall Islands firsthand. Thank you.

Thank you, Mr. Chairman.

Mr. DOOLITTLE. Thank you.

Mr. Jones is recognized.

Mr. JONES. Thank you, Mr. Chairman. I regret that I have only been here for about 10 minutes and have to leave in about 5 minutes, but I wanted to say to the panelists that are here today that I, as one Member of Congress, appreciate your being here.

Recently I had the pleasure of meeting with the Ambassador from the Marshall Islands, and we had quite an extensive discussion regarding these issues, and I look forward to reading your testimony also. But I wanted to say, Mr. Chairman, that I think that this is a sad chapter in America's history, the way that we have not met our commitment and obligation to these people who have been exposed to our nuclear testing during the Cold War.

And I want to say to the citizens of the Marshall Islands that as one Member of Congress, I look forward to working with members on this Committee on both sides of the political aisle to do what needs to be done to make sure that we as an honorable Nation keep our commitment that we have made in the past and do everything that we can to enhance the lives of the citizens of the Marshall Islands, and particularly those who have developed a disease from the exposure to this nuclear testing.

So, Mr. Chairman, with that I want to thank you, Chairman Young, for bringing this hearing to the Committee and letting us work together in a bipartisan way to help the citizens of Marshall Islands. Thank you.

Mr. DOOLITTLE. I thank the gentleman. Let me inquire of my Members, is there the desire for Members to have a second round of questioning? The Chair recognizes Mr. Faleomavaega.

Mr. FALEOMAVAEGA. Thank you, Mr. Chairman. I do have a couple of more questions that I would like to ask the panelists, if I may.

Mr. Muller, as you know, one of the most hotly debated issues right now before the Congress is the issue of theater missile defense. Do you consider the Kwajalein missile range an important aspect of our strategic interests as far as the theater missile defense in the Pacific, as well as in other regions of the world?

Mr. MULLER. I think it is one of the most important sites to the strategic defense. As I have stated in our statement, we continue to make the commitment to make that available to the United

States. At the same time we must look at some of the negative effects that have resulted from the presence of the military there.

Mr. FALEOMAVAEGA. These missiles when they are fired from the United States, are they from California, Vandenberg as I recall?

Mr. MULLER. Vandenberg.

Mr. FALEOMAVAEGA. These are ICBM's, right, and they are fired from California; and they get to Kwajalein in about one hour's time period?

Mr. MULLER. In seconds.

Mr. FALEOMAVAEGA. In seconds? I see. We have been doing this for what, almost 50 years?

Mr. MULLER. Forty.

Mr. FALEOMAVAEGA. I would like to ask Minister deBrum, as you know, we have had a very interesting dialogue with Dr. Seligman of the Department of Energy. It is his considered opinion that as far as he is concerned the Department of Energy is doing a real fine job in providing proper and medical examination, not only to the environment in these atolls, but as well to the people. Do you take—do you agree, Minister deBrum, with that assessment?

Mr. OSCAR DEBRUM. Congressman, we do not agree with that assessment. As our statements will show you, we are indeed at odds on that. We hope that the testimony that some of the individual atollees and nuclear tribunal and some of the scientists that have been hired by Enewetak and Utirik will shed more light on that.

On that note, also, Congressman, if I may at this time enter into the record our intention to provide written answers to some of the remarkable concerns raised by the State—Department of State representative earlier. We think that that record ought to be settled.

Mr. FALEOMAVAEGA. Mr. Chairman, I would like unanimous consent that the members of the panel do offer statements for the record in response to some of the comments made earlier by the officials of the State Department as well as the other agencies represented.

Mr. DOOLITTLE. Without objection so ordered.

Mr. FALEOMAVAEGA. Thank you, Mr. Chairman. Mr. deBrum, I noticed also in your statement that there was a legal classification. I assume the Department of Energy—they said that the least amount of radioactive atoms—in other words, people who shouldn't even be examined among the Marshallese people, and yet looking into this portion of the whole examination process, these so-called—the least amount of radioactive people exposed to radiation, actually when they were examined, they were 250 times more exposure than if I were a U.S. citizen being exposed to the same contamination.

This is in reference to your earlier statement that as far as you are concerned all of the Marshallese people have been exposed because of this.

Mr. OSCAR DEBRUM. That is correct, sir. We consider all of the Marshallese people to be exposed. There are cases also where American citizens who lived in the Marshalls during this period have come down with radiogenic diseases but have nowhere to go for claims because they fall between the cracks. They were not in Utah. They were in the Marshalls. They cannot claim for

radiogenic diseases because they are American citizens. That has to be looked at as well.

Mr. FALEOMAVAEGA. I know there was a national association of veterans. There was some 24,000 members nationwide, veterans who were exposed to our nuclear testing program, not only in the Pacific but also in New Mexico.

Believe it or not, we didn't do a very good job in conducting medical examinations for these sailors and soldiers who were also exposed to nuclear contamination as part of this test.

I notice my time is up, Mr. Chairman. I would like to thank members of the panel for their fine statements. Again, as our good friend Congresswoman Christensen said earlier about the hospitality, please extend our fondest aloha to President Imata Kabua and the members of the good people of the Marshalls for their hospitality and the beautiful reception we received when we visited these beautiful islands. Thank you, Mr. Chairman, and thank you.

Mr. DOOLITTLE. Thank you. And I thank the members of the panel for appearing today. I would join in the comments of the others. The gracious hospitality that was extended to us was very much appreciated. The opportunity to visit the Marshall Islands and actually see some of the places mentioned and to understand better, it was a great opportunity. It certainly aided me as a member of the Committee. We will now excuse this panel and ask you to go— oh, yes. Sorry, Mr. Underwood.

Mr. UNDERWOOD. Thank you, Mr. Chairman. And I know that many of the issues have already been discussed, and I won't take the Committee's time to do that except again to express my most sincere Komol tata for the hospitality and the good relationships I know that we have with the people of the Marshalls and also trying to attempt to bring some resolution to the issues that are surrounding this.

I certainly appreciate all of your commentary and I appreciate the idea of trying to develop the expertise locally within the RMI. That is an excellent suggestion. It is a shame that no one ever thought of that before. I am sure it has been thought of before. I mean, I have never heard it framed that way.

This is a matter of great concern because I still think that the anxiety caused by this and the way that it affects the lives of people every day cannot be measured in the millirems. It takes an enormous cost in terms of the human experience and the human condition and it is most regrettable that our country is responsible for that and I would like to also acknowledge that there are many people both in the Department of Energy and the Department of Interior, as well as Members of Congress that are obviously interested in seeing a resolution of this issue once and for all.

I certainly want to maintain my lines of communication open and to try to make as many documents or all the documents, not as many, all of the documents available to you in a comprehensible way so that you don't have to get a Ph.D. in engineering in order to understand them. We will have to wait for a few years for that, but I wanted to take the opportunity to express my thanks for the hospitality and the courtesies that was extended during the recent CODEL. Thank you, Mr. Chairman.

Mr. OSCAR DEBRUM. Thank you very much.

Mr. DOOLITTLE. We will have, no doubt, further questions and we will hold the record open and ask for your timely response. With that we will excuse this panel and call up the final panel, panel number three.

While the members of this panel are assembling themselves, I would just announce that we have certain statements submitted for the record, the first being by Senator Ismael John, Mayor Neptali Peter, and Davor Z. Pevec. So that is one statement. Those three have joined in that.

[The prepared statement of Messrs. John, Peter, and Pevec, and the prepared statement of Jonathan M. Weisgall follows:]

**STATEMENT OF THE ENEWETAK/UJELANG LOCAL GOVERNMENT COUNCIL BEFORE THE HOUSE COMMITTEE ON RESOURCES REGARDING THE STATUS OF NUCLEAR CLAIMS, RELOCATION, AND RESETTLEMENT EFFORTS IN THE MARSHALL ISLANDS**
May 11, 1999

Submitted by Senator Ismael John, Mayor Neptali Peter,
and Davor Z. Pevec, Legal Counsel to the People of Enewetak

Mr. Chairman and distinguished members of this committee:

The Enewetak people thank this committee for the opportunity to address their nuclear claims, relocation and resettlement issues.

The land belonging to the Enewetak people was the site of forty-three of the sixty-six nuclear tests conducted by the United States in the Marshall Islands between 1948 and 1958. One of the tests at Enewetak was especially significant as it was the first test of a hydrogen bomb. This test occurred on October 31, 1952 and was known as the "Mike" test. The test had a yield of 10.4 megatons (750 times greater than the Hiroshima bomb). The destructive power of the Mike test was exceeded only by the Bravo test (15 megatons) in all the nuclear tests conducted by the United States anywhere. The Mike test vaporized an island, leaving a crater a mile in diameter and 200 feet deep. The Mike test detonation and the detonation of the other 42 nuclear devices devastated the land of the Enewetak people. The devastation is so severe that to this day, forty-one years after the last nuclear explosion, over half the land and all the lagoon remain contaminated by radiation. The damage is so pervasive that the Enewetak people cannot live on their land without importation of food.

The damages inflicted on the land of the Enewetak people must be considered in the context of the strong attachment that the people have for their land. The story of nuclear testing on the land of the Enewetak People has many important aspects; however, the most compelling aspect is the profound effect such testing had on the people. Thus, this statement is principally about people, the Enewetak people, who for century after century developed a unique relationship with their land. They worked the soil and nurtured the plants on their land. They buried their dead on their land. They became a part of the land and it became a part of them. Laurence Carucci, an American professor of anthropology described the Enewetak people's relationship with the land as follows:

> For Marshall Islanders in general, and Enewetak people in particular, land is a part of one's person and one's entire identity. It is an integral part of a person's sense of who they are in the world and how their life makes sense as part of a certain culture. One's sense of self, both personal and cultural, is deeply embedded in a particular parcel of land on a particular atoll. . . . Not only is land hyper-valued because it is scarce, land is extremely highly valued because it represents the collective labour of generations of people who have worked the land, transforming it from bush into habitable space. Both one's labour and one's

> physical person, at death, are embedded in land in a manner that irrevocably erases any distinction European's or Americans might make that would separate one's person and the clan or family land that one inhabits. While Europeans live and die, Enewetak people are but the most visible snippet of a very active group, a clan of relatives who share a totem-like identity, a clan or jowi. Not only does that group represent the continuity of life from ancient times until the current day (jowi), it is manifest in a second visible form, the family land that is the realization of generation upon generation of continuous human occupation that has made untended earth into soil through toil and the physical substance of persons embedded in the molecular structure of that soil.
>
> When Enewetak people were moved to Ujelang in 1947, this sense of communal origin, of land as the visible representation of centuries of human labour, was lost. . . . Enewetak people were distraught, heartbroken, and in a general state of mental and emotional trauma when they were forced to leave their homeland. Their very embeddedness in a place in the world, the very processes through which the community had scratched their being into the physical contours of the earth, and the historied place that gave them a sense of meaningful connection with their communal past, were gone.[1]

This relationship with their land was severed when the United States removed the people from their land so that the United States could explode nuclear devices on their land. In effecting the removal, the United States recognized that the people of Enewetak had constitutional rights with respect to the use of their land by the United States. In addition, the United States recognized that it had responsibilities and obligations to the people of Enewetak. These rights, responsibilities and obligations were described in the memorandum attached to the Directive of President Harry Truman providing for the removal of the Enewetak people from their land. President Truman's Directive to the Secretary of Defense, dated November 25, 1947, reads as follows:

> Dear Mr. Secretary:
>
> You are hereby directed to effect the evacuation of the natives of Eniwetok Atoll preliminary to the carrying out of tests of atomic weapons early in 1948, and in accordance with the enclosed memorandum addressed to me by the Chairman of the Atomic Energy Commission.
>
> Sincerely yours,
>
> HARRY S. TRUMAN

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[1] See, Carucci, L.M., and Maifeld, M.H., "*Jen Entaan im Jerata*: Times of suffering and Ill Fortune: An overview of the Daily Life on Ujelang and Enewetak since 1946," March, 1999. See also, Kiste, R.C., "History of the People of Enewetak," 1987 DOE/EV/00703-T1-Vol.1, page 19, ("The people had an almost mystical attachment to their land, and their ties to it were deep. [A]n individual's identity was. . . defined by one's *wato* and one's island of residence."). Tobin, J., "Resettlement of the Enewetak People", 1967, ("Land, the source of sustenance, is considered by the Marshallese to be their most valuable asset. It is regarded as almost sacred. . .")

The memorandum attached to President Truman's Directive described the rights of the Enewetak people and the responsibilities and obligations to the Enewetak people assumed by the United States. The memorandum reads in relevant part as follows:

> 1. They will be accorded all rights which are the normal constitutional rights of the citizens under the Constitution, but will be dealt with as wards of the United States for whom this country has special responsibilities.
> 2. The displacement of local inhabitants will be kept to a minimum required for their own safety and well being and will not be accomplished merely for considerations of convenience.
> 3. The displacement of local inhabitants will be effected by agreements reached with them regarding resettlement, including fully adequate provisions for their well being in their new locations.
>
> The Atomic Energy Commission and the Secretary of Defense will undertake to supply to the State Department evidence sufficient to demonstrate in an international forum that in conducting such experimentation in Eniwetok, the United States is not thereby subjecting the local inhabitants of the Trust Territory of the Pacific to perceptibly greater danger than, say, the people of the United States.

In a dispatch from Admiral Ramsey, the Chief of Naval Operations, dated 5 December 1947, the rights of the Enewetak people and the responsibilities and obligations of the United States were summarized as follows:

> PURSUANT TO ORDERS FROM THE PRESIDENT THE SECRETARY OF DEFENSE HAS DIRECTED SECNAV TO EFFECT THE EVACUATION OF THE NATIVES OF ENIWETOK.
>
> IN RECOMMENDING THIS ACTION THE ATOMIC ENERGY COMMISSION STATED THAT THE INHABITANTS OF THE ATOLL WOULD BE ACCORDED THE NORMAL CONSTITUTIONAL RIGHTS ACCRUING TO U S CITIZENS UNDER THE CONSTITUTION AND TREATED AS WARDS OF THE UNITED STATES; AND THAT ADEQUATE PROVISION WOULD BE MADE FOR THEM IN THEIR NEW LOCATION.
>
> ADHERE TO THE FOREGOING STIPULATIONS AND KEEP CNO FULLY INFORMED REGARDING DETAILS AND PROGRESS OF RELOCATION.
>
> ADVISE DATE ON WHICH NEGOTIATIONS WERE OPENED WITH ENIWETOK PEOPLE.

Clearly, the United States promised the Enewetak people that they would have the same rights under the U.S. Constitution as citizens of the United States. This means that the Enewetak people are entitled to just and adequate compensation for the use of their land by the United States. Since use of Enewetak was temporary, just compensation includes loss of use computed on an annual fair rental basis, plus cost to restore the land to a condition of full use, plus consequential damages.

The United States also promised that the Enewetak people would be wards of the United States and, accordingly, assumed a fiduciary duty to them. The United States promised to take care of the Enewetak people, to provide them food and shelter as necessary, to provide for their health and education, and to promote their economic development.

Unfortunately, the Enewetak people have yet to receive just and adequate compensation. They have received some compensation under the Compact of Free Association, but have not been provided the just and adequate compensation required by the United States Constitution.[2] Similarly, the United States breached its fiduciary duty to the Enewetak people by failing to take care of them after they were relocated to Ujelang.

The people of Enewetak were exiled on Ujelang for a period of thirty-three years, from 1947 to 1980. The atoll of Ujelang is a small atoll and has significantly fewer resources than were available on Enewetak. Ujelang has one-fourth the land area and one sixteenth the lagoon area. The land at Ujelang was largely coral ruble unable to sustain any significant food production. While on Ujelang, the Enewetak people suffered deprivation of various types including, near starvation, disease and illness, lack of education, lack of adequate health care, loss of income potential, resource losses, lack of communication, and isolation. In addition, they suffered the disruption of their customs and traditions which resulted in loss of identity and loss of a customary and traditional way of life. The suffering and hardship of the Enewetak people while on Ujelang are well documented and widely recognized. For example, the U.S. Department of Interior in a letter to the President dated January 14, 1976 said in relevant part:

> The people of Enewetak Atoll were removed from their home atoll in 1946 by the U.S. Government in order that their atoll could be used in the atomic testing program. The people were promised that they would be able to return home once the U.S. Government no longer had need for their islands.
>
> During the thirty years that the Enewetak people have been displaced from their home atoll they have suffered grave privations, including periods of near

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[2]If government takes private property it is constitutionally required to pay just compensation to the owners of that property. *United States Constitution, Amendment V.* It is well established that in cases involving temporary takings, "just compensation" refers to the rental value of the property for the period taken, together with any damage sustained by the property. *Kimball Laundry Co. v. United States*, 338 U.S. 1, 69 S. Ct. 1434 (1949); *United States v. General Motors*, 323 U.S. 373, 65 S. Ct. 357 (1945). The United States Supreme Court has stated that the purpose of just compensation is to put the owner in as good a position as he would have occupied if his property had not been taken. *United States v. Miller*, 317 U.S. 369, 63 S. Ct. 276 (1943).

starvation, in their temporary home on Ujelang Atoll. The people have cooperated willingly with the U.S. Government and have made many sacrifices to permit the United States to use their home islands for atomic testing purposes.

The Enewetak people had to endure the hardships and sufferings because the U.S. forgot about them and forgot about its commitment to take care of them.

What needs to be done to provide the people of Enewetak the full compensation to which they are entitled? Full compensation includes three major categories: loss of use, cost to restore, and consequential or hardship damages.

**1. Loss of Use.** Enewetak Atoll is private property. The use of such private property by the United States was temporary. The people of Enewetak are entitled to compensation for the loss of use, occupancy and enjoyment of the entire atoll from the period 1947 to 1980, plus loss of use, occupancy and enjoyment of those portions of the atoll which remain unavailable from 1980 until the people once again have full use of those portions.[3] Loss of use was computed by two different appraisal firms in Honolulu, Hawaii each of whom has substantial experience in valuations of Pacific island properties. Loss of use was computed on the basis of estimated historical annual rents plus interest. The appraisal firms both concluded that loss of use of Enewetak Atoll as a result of the U.S. nuclear weapons testing program amounts to the sum of approximately $235 million to January 1997.[4]

**2. Cost to restore.** Over half the land area (approximately 1000 acres) of Enewetak atoll remains unavailable to the people for full use because of radiation contamination. In addition, all the land of the atoll was severely damaged as a result of the weapons tests, bulldozing and scrapping activities both before and after each of the tests, the construction of support facilities (concrete building pads, asphalt runways and roads), and the scrapping and soil removal activities of partial cleanup that occurred between 1977 to 1980. Also, it must be noted that the Enewetak people consist of two groups. One group, the people of Enjebi island, have not been able to resettle their island because it remains contaminated. The construction of housing and necessary infrastructure is another element of the cost to restore damages. Thus, cost to restore can be best described as those costs necessary to accomplish three objectives: remediation of

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[3] It is important to note that loss of use (annual rental value) must be awarded until such time as the land has been restored to a condition of full and unrestricted use. *State of Ohio v. U.S. Department of Interior* (D.C. Cir. 1989) 880 F.2d 432; *See also,* 26 Am Jur 2d, Eminent Domain, Section 306 ("The government has been held liable for the reasonable rental value of the premises for the full amount of time needed to place the owner back in possession. This can include the time needed to accomplish restoration of the premises to their former condition, reasonable wear and tear excepted.").

[4] See, Hallstrom, J.E. The Hallstrom Group, Inc., and Lesher, A.L., Raymond A. Lesher and Co., Ltd., *Joint Appraisal of the Loss in Use Value of Enewetak Atoll, Republic of the Marshall Islands*, October 1996, updated January 1997.

radiologically contaminated land, soil and plant rehabilitation and restoration, and resettlement of Enjebi island.

a. Radiological remediation: The Nuclear Claims Tribunal of the Republic of the Marshall Islands in its ruling of December 21, 1998 adopted the U.S. standard of 15 millirems per year for cleanup of radiation contaminated land. The rationale for the adoption of the standard was that the Marshallese people are entitled to the same level of protection from radioactive contamination created by the U.S. nuclear weapons and testing program as is provided to U.S. citizens. This rationale is consistent with a guidance issued by the International Atomic Energy Agency which states:

> As a basic principle, policies and criteria for radiation protection of populations outside national borders from releases of radioactive substances should be at least as stringent as those for the population within the country of release.[5]

The rationale is also consistent with the declaration of the U.S. made in 1947, and contained in the memorandum described above, which states:

> [I]n conducting such experimentation in Eniwetok, the United States is not thereby subjecting the local inhabitants of the Trust Territory of the Pacific to perceptibly greater danger than, say, the people of the United States.[6]

Mr. Allan C.B. Richardson, formerly of the U.S. Environmental Protection Agency, and an expert on national and international radiation protection standards, assisted the Enewetak people and other affected Marshallese in describing such standards to the Nuclear Claims Tribunal. Mr. Richardson has been invited to submit a statement to this committee regarding such standards and their application to the Marshall Islands. We believe his statement and testimony will be helpful. It is important to note that if Enewetak was a part of the U.S., the U.S. radiation cleanup standard would apply.

Although the establishment of a cleanup standard is necessary, the next question is how to effect the necessary radiological remediation. To answer that question, the Enewetak people asked the firm of Sanford Cohen & Associates, Inc. (SC&A) to research, evaluate and describe the following: (1) the current radiological conditions at Enewetak, (2) the current doses and health risks to the people of Enewetak if one were to do no cleanup using U.S. methodologies, (3) collective health impacts under various remedial alternatives, (4) cleanup alternatives to permit full use of the land using U.S. standards, and (5) the costs of such alternatives. SC&A provided a thorough two volume report addressing the above. In addition, Dr. John Mauro and Dr. Hans Behling, the principal authors of the SC&A report, testified before the Nuclear Claims

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[5] See, IAEA, Safety Series No. 67, *Assigning a Value to Transboundary Radiation Exposure* (1985).

[6] See, Memorandum to President, from Chairman of the Atomic Energy Commission, November, 25, 1947

Tribunal addressing all aspects of the report. After analyzing 30 different cleanup options, Drs. Mauro and Behling recommended an approach "consisting of a combination of soil removal and application of potassium to soil as an integral part of a self-sustaining, agricultural rehabilitation program." The total cost of the recommended remediation strategy is estimated at about $115 million.[7] This committee has invited Dr. Mauro to give a statement and provide testimony on the radiological remediation of Enewetak Atoll. We were truly fortunate in having Drs. Mauro and Behling and the other SC&A personnel assist us, and we believe their testimony will be helpful to the committee.

b. Soil and Plant Rehabilitation. All of the land of Enewetak was severely damaged as a result of the nuclear testing program. What was once a productive atoll providing food to the Enewetak people and sufficient surplus production for export of coconut products, became a land with soil devoid of any nutrients unable to support food bearing plants. Again, as previously described this removal of the rich atoll topsoil was the result of the nuclear tests[8]; the pre-test and post test activities that involved the bulldozing and clearing of land and laying of asphalt on the land; the construction of support facilities to provide housing, infrastructure, runways, roads, buildings, etc.; the bulldozing, clearing, scrapping and soil removal activities of the 1977-80 partial cleanup. These activities devastated the ecology of Enewetak Atoll. The dark rich organic matter that takes centuries to build up to levels of two to four feet in depth was gone. Food bearing plants could not survive in such an environment. An agriculture program was initiated after the 1977-80 cleanup. However, that program has only recently initiated an effective soil and plant rehabilitation method under the direction of Mr. Teariki Franco Matearikí. The method requires the digging of ditches and the placing of layers of organic matter in the ditches along with a chicken manure and copra cake compost. This is followed by the planting of both food bearing plants and salt and wind spray protecting plants. This is a very labor intensive program. All of the land in the northern part of the atoll requires such full rehabilitation, including long-term monitoring, nurturing, and routine applications of potash, biomass and manure. The cost of such full rehabilitation is estimated at $29,000 per acre. The southern islands of the atoll require similar although less intensive rehabilitation, because of some prior rehabilitation and because of the recent implementation of a more effective rehabilitation program on those islands. The total cost for soil and plant rehabilitation of all the islands of the atoll is estimated at $17.7 million.[9]

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[7] See, Mauro, J., Behling, H., Anigstein, R., SC&A, *Part 1 - Statement Before the Nuclear Claims Tribunal*, March 1999, and *Part 2 - Technical Background Document*, March 1999.

[8] See, DOE NVO-213, (1980), ("A nuclear detonation can aptly be described as awesome. . .Quite apparent are the immediate effects of the intensely hot fireball which can consume a 300 foot steel tower or plate nearby objects with a thin film of plutonium and fission products; of the giant waves that can wash over everything nearby if the device is detonated under or near a water surface; of the massive cloud of radioactive particles that rise to great heights then slowly drift to earth or wash out in a subsequent rain.").

[9] For a full description of the soil and plant rehabilitation method, both initial phase and long-term phase, see, Matearikí, T.F., *Initial Report*, March 1999.

c. Resettlement Costs. As described above, one group of our people, the people of Enjebi island, have not been able to return to their home island. Enjebi was ground zero for a number of tests. In addition, it underwent bulldozing, scrapping and soil removal during the 1977-80 partial cleanup activities. In order to make the island habitable again, it requires the radiological remediation and soil and plant rehabilitation described above. In addition, the people require the housing, infrastructure, and other buildings necessary to permit them to live on the island while the rehabilitation is ongoing. The housing, rehabilitation support buildings, infrastructure, and community center, are consistent with resettlement housing, buildings, and infrastructure currently underway for the communities of Bikini and Rongelap. The costs for such housing, building and infrastructure for Enjebi island is estimated at $30.7 million, including a 10% contingency. In addition, the housing on Enewetak, Medren, and Japtan islands constructed during the 1977-80 partial cleanup requires upgrades, and the islands require infrastructure such as power and water, to make the living conditions consistent with those currently underway for Bikini and Rongelap. The cost for such upgrades is estimated at $10 million. The above-described resettlement costs were developed by Mr. Earl Gilmore of E.P.G. Corporation, a construction consultant, who has extensive experience and expertise in construction costs in the Marshall Islands.[10]

**3. Consequential or Hardship Damages.** As described above, the Enewetak people suffered greatly during their exile on Ujelang atoll. From the very beginning, they were told that their removal from Enewetak would be temporary and that they would be taken care of on Ujelang. For example, Captain John Vest, the U.S. military governor of the Marshall Islands in 1947, along with Vice Admiral Salada, said the following to the Enewetak people prior to their removal from Enewetak:

> Vice Admiral Salada and I were asked some questions by the people at this time. They wanted to know when they could return to Enewetak. They also wanted to know what they could expect from the United States in the way of ongoing support and care during the period of their removal. Based on what I knew of the prevailing estimates of the scientists, I told them they would be able to return to Enewetak fairly soon after the tests were completed; perhaps in three to five years. It certainly was not in my mind that it would be longer than that, or the taking of Enewetak for the testing program was permanent. At the time it was my understanding, and I believe their understanding as well as a result of our discussions, that the people of Enewetak would be able to return to Enewetak Atoll after the testing was concluded, and that the likely time frame for this return was three to five years.
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> As to their care, I had been assured by Admiral Salada that the steps necessary to move the Enewetak people and resettle them on Ujelang would be provided by the Navy. While we hoped that they would eventually become more

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[10]See, Gilmore, E.P., E.P.G. Corporation, *Enewetak Atoll Revised Master Plan Concept for Enjebi Island and Upgrade and Restoration of Facilities at Enewetak, Medren and Japtan Islands*, March 1999.

> or less self sufficient, the Navy agreed to provide them with such supplementary food and necessities as they required, to provide the means by which they could trade copra the produced for small luxuries and necessities purchased from the field trip's stores, to provide the health care they might need, to see to their schooling, and the like. In other words, we agreed to make sure they fared well on Ujelang.[11]

Neither event occurred. The exile from Enewetak lasted for a period of thirty-three years and the U.S. failed to take care of the Enewetak people on Ujelang. The feelings of the Enewetak people on Ujelang are described by Dr. Carucci as follows:

> When Enewetak people were told they would have to leave their home atoll, they were also told that the move would be temporary and that the Americans would continue to watch over them. Not surprisingly, on Ujelang they came to feel that they had been totally abandoned. For a period of time, the Navy maintained a weather station on Ujelang that kept people supplied with entertainment if not much food, but with the departure of the Navy, serious hardship and suffering began to become apparent. In thinking back on this era, people recall that the earliest times of hardship began around 1950 or 1951, soon after the birth of one of my siblings by adoption, Tallenja. Up until that time, life on Ujelang was satisfactory, since the products of land and sea had not been harvested for a decade or more. Throughout the remaining years of the 1950s and throughout much of the 1960s, however, the community was mired in despair, living through frequent periods of famine and having given up all hope of being returned to Enewetak. Not until 1969, after "the strike", did the sense of futility on Ujelang began to abate and, even then, hunger was not unknown.
>
> There are a number of forms of evidence that show how serious the suffering was on Ujelang during these years. First, are many similar versions of the stories that elders told on the atoll in the mid-1970s. While stories of suffering are virtually innumerable, those that are repeated again and again focus on a number of core incidents including famine and hunger, near starvation and death from illness, food shortage and the limitations of the environment on Ujelang (fishing/collecting), the polio epidemic, the measles epidemic, the rat infestation, the time of the strike, an easing of suffering during the 1970s but with continued homesickness and desire to return to Enewetak. In a concluding section, then, I look at the disappointments of life on Enewetak, disappointments that could not be foreseen on Ujelang.[12]

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[11]See, Affidavit of Captain John Vest, pp 9-10.

[12]See, Carucci, L.M., supra, at pp. 13-14.

Unfortunately, the hardships and sufferings did not end with the return of the people to Enewetak in 1980. The severe damage to the land, the residual radiation contamination on over half the land of the Atoll, the inability to resettle Enjebi, the inability to grow adequate food crops for local consumption, the inability to use their land for productive economic purposes, the required reliance on canned imported foods, all continue to cause difficulty and hardship to the Enewetak people. As Dr. Carucci describes at pp. 58-59:

> Initially people were thrilled with the long-awaited return to Enewetak, yet that return, in many ways, has involved a more serious, though perhaps more subtle, form of suffering. Since their return in 1980, Enewetak people have struggled with life on the New Enewetak, a place reminiscent of their homeland yet, in so many ways, a radically different location than the atoll on which people lived in the 1940s. On the New Enewetak, people experienced cultural deprivation and rapid de-culturation. In this new landscape, stripped bare of the materials required for daily existence, most of the day-to-day activities of Marshallese life were made irrelevant. Ironically, having been brought back to the physical skeleton of their homeland, the long-standing object of their desire, people were only able to witness firsthand, how desiccated, distant, and unrecognizable their mother place had become. As people struggled to fulfill their desires of reunification with their primordial place, the more they recognized the foreign-ness of their home. It is this contradiction of the grandest scale that has become the source of incredible frustration for Enewetak people. They cannot be at home in the very land that is their home since the contours of the land are no longer the same, its productive capacity is lacking, and, without those products, the wide array of day-to-day activities that allowed people to make local products into canoes, and sleeping mats, and foods, have lost their meaning. For nearly twenty years, people have not been able to make themselves into "real Enewetak people" since the materials required for this self-fashioning are not available to them. This is the grand contradiction of life on Enewetak. The most cohesive community in the Marshall Islands has, in one generation, been thrown into disarray by placing them in a situation where their most heartfelt desires could not possibly be realized.

These past and continuing hardships deserve compensation in addition to compensation for loss of use and cost to restore. This Congress has had occasion to address compensation for the relocation of other peoples. For example, in 1988 the Congress enacted the Civil Liberties Act, Pub. L. 100-383 to compensate (1) the persons of Japanese ancestry living in the U.S. who were forcibly relocated to internment camps from March 1942 to January 1946; and (2) the Aleutian islanders who were relocated from their home islands during and after World War II.[13] The range of hardships damages per year can be calculated as between $7,000 per year per

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[13] *See generally* Commission on Wartime Relocation and Internment of Civilians, *Personal Justice Denied* 117-133, 318, 355-359 (reprinted by House Committee on Interior and Insular Affairs, March 1992).

per year per person to $10,000 per year per person. Such and other comparisons demonstrate that the Enewetak people should receive $10,000 per year for each of the years they lived on Ujelang. In addition, because of the continuing hardships experienced by the people on Enewetak, the existing infrastructure, consisting of an eight thousand foot runway, docks on Enewetak and Medren island, and fuel tanks of 1.5 million gallon capacity on Enewetak, should be rehabilitated. Such rehabilitation in addition to the radiological remediation, the soil and plant rehabilitation, and the resettlement costs, would finally permit the Enewetak people the foundation upon which to build a self-sufficient community. The cost of such rehabilitation is estimated at $11.7 million.

The above described categories of just and full compensation and evidence relating thereto have been presented to the Nuclear Claims Tribunal of the Republic of the Marshall Islands.

The Enewetak people originally filed their claims for damages against the United States in the United States Courts. Because of the Compact of Free Association Act of 1985, U.S. Pub. L. No. 99-239, 99 Stat. 1770 (1986) and the espousal provisions contained therein, the claims of the Enewetak people were dismissed in the United States Courts, the United States Courts finding that "the consent of the United States to be sued in [its courts] . . . had been withdrawn in conjunction with the establishment of an alternative tribunal to provide just compensation." See, *People of Enewetak v. United States*, 864 F.2d 134 (Fed. Cir. 1988). The alternative tribunal referred to by the United States Courts is the Nuclear Claims Tribunal. The Enewetak people never compromised their claims against the United States by any settlement or voluntary dismissal of their claims against the United States. Rather, the Enewetak people have steadfastly maintained that they are entitled to full compensation for all the damages they suffered as a result of the Nuclear Testing Program. Accordingly, the Nuclear Claims Tribunal is the only body presently constituted for purposes of considering the claims of the Enewetak people, determining the nature and the extent of the damages suffered by the people of Enewetak, and awarding just and full compensation. The evidence presented to the Nuclear Claims Tribunal on April 14 to 23, 1999 consisted of most of the material, reports and testimony described above. The amount of such damages is summarized as follows:

**Enewetak Award for Cost to Restore, Loss of Use and Hardship**

1. Cost to restore:

| | |
|---|---|
| - Radiological remediation: | $115 million |
| - Soil rehabilitation and revegetation | 17.7 million |
| - Resettlement Enjebi | 30.7 million |
| - Upgrades on Enewetak, Medren, and Japtan | 21.6 million |
| - Operations and Maintenance | 2.45 mil. |
| - Imported food required | $500,000/year until lands are fully restored. |

2. Loss of Use: $235 million plus*

*(Plus interest of 7% from 1/24/97 until paid; plus annual rental for land not available (949.8 acres) at the minimum rate of $3,000 per acre per year until lands become fully usable, plus interest of 7% on such annual rental value until paid). See Claimants exhibit 15.

3. Hardship:
   For the 33 years on Ujelang: $10,000/per person/year
   For hardship on Enewetak: To permit the development of an economic base by providing funding for the Enewetak airport, docks, fuel tanks, etc. referenced as a part of the upgrades under cost to restore above.

Before making an award for such damages, the Nuclear Claims Tribunal will evaluate and deduct the prior compensation received by the Enewetak people from the U.S. Nonetheless, the expected award of damages is significant. Although significant, these damages are only a fraction of the amount of the **$147 Billion** estimated by the U.S. DOE to be required to clean up radiation contaminated sites in the U.S. It must be noted that the nuclear tests in the Marshall Islands had 100 times the yield, or explosive power, of all atmospheric tests detonated in the continental United States.

It must also be noted that the testing at Enewetak benefitted the U.S. in a variety of ways: it permitted the tests to occur away from U.S. territory thereby avoiding potentially enormous health and environmental costs to citizens of the U.S.; it permitted the U.S. to develop weaponry that maintained peace, allowing the U.S. economy to become the most dominant in the world; it provided enormous funding to the U.S. military-industrial complex, thereby pumping money into the U.S. economy; it helped the U.S. win the cold war, thereby preserving the American way of life. No such benefit occurred to the Enewetak people. They suffered only the burdens. They also had the burden of proving and quantifying their damages before the only body constituted to hear their claims. Unfortunately, that body, the Nuclear Claims Tribunal, has no money. Therefore, it is now time to consider the necessary steps which are required to effect an appropriation from the U.S. Congress so that the promises made to the Enewetak people in 1947 for rights under the U.S. Constitution along with the status of wards of the U.S. will finally be fulfilled.

We thank you for this opportunity to address this Honorable Committee and would be pleased to answer any questions you may have.

**STATEMENT OF JONATHAN M. WEISGALL**
**LEGAL COUNSEL TO THE PEOPLE OF BIKINI**
**BEFORE THE HOUSE RESOURCES COMMITTEE**
**May 11, 1999**

Thank you for the opportunity to submit written testimony to the Committee on behalf to the people of Bikini, whom I have represented since 1975. With me at today's hearing are Senator Henchi Balos, Mayor Tomaki Juda, Speaker Kessai Note, Lucky Juda, Johnny Johnson, and Jack Niedenthal.

Background

Many of you are familiar with the Bikinians' odyssey. The 167 islanders were moved off their atoll by the U.S. Navy in March 1946 to facilitate Operation Crossroads, the world's third and fourth atomic bomb explosions. Between 1946 and 1958, 23 atomic and hydrogen bomb tests were conducted at Bikini Atoll, including the 1954 Bravo shot, the largest bomb ever exploded by the United States. The explosive yield of Bravo was more than 200 times greater than the yield of the largest test ever conducted at the Nevada Test Site, and its fallout covered an area of 50,000 square miles, with serious-to-lethal radioactivity falling over an area almost equal in size to the entire state of Massachusetts.

The Bikinians were first moved to Rongerik Atoll, 125 miles east of Bikini, where they nearly starved to death, then briefly to Kwajalein and then finally to Kili in 1948. Sadly, Kili remains home to most Bikinians more than 53 years after the testing began, and life there remains difficult. Kili is a single island, not an atoll with a lagoon. Bikini, with its 23 islands and 243-square mile lagoon, is thousands of times bigger, and its land area is more than nine times bigger. Kili has no sheltered fishing grounds, so the skills the people had developed for lagoon and ocean life were rendered useless on Kili. This drastic change from an atoll existence, with its abundant fish and islands as far as the eye could see, to an isolated island with no lagoon and inaccessible marine resources, continues to take a severe psychological toll on the people.

Following President Johnson's August 1968 announcement that Bikini was safe and that the resettlement of Bikini would "not offer a significant threat to [the Bikinians'] health and safety," he ordered the atoll rehabilitated and resettled.[2] The first Bikinians returned to their atoll in 1969. They lived there until 1978, when medical tests by U.S.

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Findings of the Marshall Islands Nationwide Radiological Study Summary Report (December 1994) at 3; Jonathan M. Weisgall, Operation Crossroads: The Atomic Tests at Bikini Atoll (Naval Institute Press 1994) at 306.

[2] Shields Warren, "Report of the Ad Hoc Committee To Evaluate The Radiological Hazards Of Resettlement Of The Bikini Atoll," DOE/CIC Document No. 41847; New York Times, August 13, 1968, p. 1; August 2, 1968 memorandum for the President from Bromley Smith entitled "Return Of The Bikini People," National Security file, Lyndon B. Johnson Library.

doctors revealed that the people had ingested what may have been the largest amounts of radioactive material of any known population, and they determined that the people had to be moved immediately.[3] What went wrong? An Atomic Energy Commission blue-ribbon panel, in estimating the radiation dose the people would receive, relied on an AEC scientist's erroneous data that threw off one part of their calculations by a factor of nearly 100. "We just plain goofed," the scientist told the press.[4]

History sadly repeated itself in late August 1978, as U.S. ships once again entered Bikini lagoon and the 139 people living on the island packed up their possessions and left. The 2,500 Bikinians living today remain scattered throughout the Marshall Islands and the United States, with the largest number still living on Kili.

The following are the major issues facing the Bikini people today:

I. Radiological Cleanup

The Bikini people have brought a property damage claim before the Nuclear Claims Tribunal in Majuro to obtain an accurate cost estimate for the damages caused to Bikini Atoll, including loss of use, radiological cleanup and resettlement, and other consequential damages. You have heard today from Dr. John Mauro of SC&A, who has already prepared an analysis of the Enewetak cleanup, including an evaluation of the potential radiation doses and health risks to the people of Enewetak and costs associated with various remediation options. Dr. Mauro, who has conducted similar radiological assessments for the U.S. EPA for many years, is as well qualified as any expert in the world to study cleanup options, costs and risks in the Marshall Islands.

Dr. Mauro and his team are preparing a similar report on Bikini, which should be completed within three months. The exact cost has not yet been established, but it will greatly exceed the $110 million appropriated by Congress to the Resettlement Trust Fund for the People of Bikini. Moreover, even if all the funding were available today, it is estimated that the entire cleanup and resettlement process, from planning through execution, will take approximately ten years.

You will hear today from representatives of the other atolls about the huge costs of the legacy of the U.S. nuclear testing program in the Marshall Islands, ranging from health care costs to loss of use of islands, radiological cleanup, rehabilitation, resettlement, and other damages. These costs add up. In considering whether - and how - to pay for them, consider the following points:

First, Rep. John Seiberling of Ohio, a member of this Committee, responded to this question in 1984 as follows:

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[3] Washington Post, April 3, 1978, p. 1, and May 22, 1978, p. 1

[4] Los Angeles Times, July 23, 1978, p. 3.

> There will be questions raised, I am sure, as to whether there is a less costly way of taking care of the people who were affected by our nuclear testing, and there will be a question as to whether we should go as far as some of us think we need to go, including the restoration of Bikini. I would only say that the costs of this program are a tiny fraction of the costs of that nuclear testing program that went on.[5]

Second, these cleanup costs must be considered in the context of the cost of the nuclear tests in the Marshall Islands, which totaled nearly $4.3 billion in 1999 dollars.[6]

Third, the United States never questioned the cost or value of the nuclear tests at Bikini, because they assured U.S. nuclear superiority over the Soviet Union and led to immediate savings of billions of dollars in the Defense Department budget in the late 1940s and 1950s. Just the first two tests at Bikini led to a greater emphasis on atomic warfare than on more expensive conventional weapons and troops.[7] As the AEC told Congress:

> Each of the tests involved a major expenditure of money, manpower, scientific effort and time. Nevertheless, in accelerating the rate of weapons development, they saved far more than their cost.[8]

Fourth, the Resettlement Trust Fund serves two masters: (1) the current needs of the Bikini people on Kili and Ejit Islands, and (2) the radiological cleanup of Bikini Atoll. The trust fund was originally established by the Congress in 1982 for "the relocation and resettlement of the Bikini people in the Marshall Islands, principally on Kili and Ejit Islands." Public Law No. 97-257. Congress added $90 million to the trust in 1988 under Public Law No. 100-446 and modified its terms to provide that the fund could also be "expended for rehabilitation and resettlement of Bikini Atoll." Given the overwhelming day-to-day needs of the Bikini people, such as health care, education, housing, and food to supplement the modest U.S.D.A. program, it is hard for the leaders to dedicate massive

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[5] Compact of Free Association: Section 177 Of The Proposed Compact Of Free Association: Compensation For Victims Of U.S. Nuclear Testing In The Marshall Islands, Before the House Interior and Insular Affairs Subcommittee on Public Lands and National Parks, 98th Cong., 2nd Sess. at 3 (May 8, 1984) (statement of Rep. Seiberling) (hereinafter referred to as "Compact Section 177 Hearing").

[6] Stephen I. Schwartz, ed., Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons Since 1940 (Brookings Institution Press 1998) at 103.

[7] See, e.g., Weisgall, Operation Crossroads, supra n. 1 at 279-87.

[8] U.S. Atomic Energy Commission, Thirteenth Semiannual Report of the Atomic Energy Commission (1953) at 18.

sums now to clean up Bikini. The only way to solve this problem is additional funding for the trust fund.

Fifth, the $90 million that Congress added to the Resettlement Trust Fund in 1988 was based on reports prepared by the Bikini Atoll Rehabilitation Committee (BARC) that estimated only the costs of cleaning up and resettling Bikini and Eneu, two of Bikini Atoll's 23 islands. BARC, a blue-ribbon committee established by Congress in 1982 to determine the feasibility and costs of a cleanup, estimated the cleanup costs of Bikini and Eneu to range between $130 million to $208 million, in 1988 dollars.[9] And these estimates did not seek to quantify other damages suffered by the Bikini people, such as loss of use of their islands for half a century or consequential damages from their forced relocation.

Lastly, should anyone believe that the $90 million added to the Resettlement Trust Fund constituted the last bite at this apple, I refer you to 103 (l) of Compact of Free Association Act of 1985, Public Law No. 99-239, which declares that "it is the policy of the United States . . . that because the United States, through its nuclear testing and other activities, rendered Bikini Atoll unsafe for habitation by the people of Bikini, the United States will fulfill its responsibility for restoring Bikini Atoll to habitability. . . ." This overriding responsibility goes well beyond funding the cost of cleaning up two of Bikini's 23 islands, and it requires Congress to give careful consideration to the comprehensive and careful analysis of the Bikini cleanup cost figures being provided to the Nuclear Claims Tribunal.

How realistic is it to consider funding Bikini cleanup - or the cleanup of the other atolls - out of the Interior Department's budget? It will probably be very difficult. However, there is a more appropriate budget vehicle for the cleanup. It is the Department of Energy's Environmental Management Program Budget, which is earmarked for the cleanup of radioactive, chemical and other hazardous waste at 53 U.S. nuclear weapons production and development sites in 23 states. That cleanup program is estimated to cost nearly $147 billion.[10] For the last three years Congress has appropriated an average of $5.75 billion annually for the program, and it is anticipated that this funding level will continue at this rate indefinitely.[11]

This is where the cleanup costs for Bikini should come from. And while the $90 million already appropriated sounds like a lot of money, more than double that will be needed to complete the job. But let me remind you that since 1991 the U.S. Government,

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[9] Department of the Interior and Related Agencies Appropriations for 1989: Hearings Before a Subcommittee of the Committee on Appropriations, 100th Cong., 2nd Sess. (April 26, 1988) at p. 1181.

[10] Accelerating Cleanup: Paths to Closure (U.S. Department of Energy, Office of Environmental Management) (June 1998) at 2, 5.

[11] Id. at 8. See also Environmental Management: Program Budget Totals (FY 1998 - FY 2000) and Environmental Management's FY 2000 Congressional Budget Request.

through DOE's Environmental Management Program, has spent more than $10 billion at the Hanford, Washington nuclear weapons site without removing one teaspoonful of contaminated soil.[12] That's what DOE has spent on studying the problem. Bikini's numbers sound big, but they look like a bargain compared to what we spend as a country on our own sites - sites, I might add, that were exposed to a tiny percentage of the radiation that was unleashed at Bikini.

II. Worker Safety

As the cleanup of Bikini occurs, the Bikinians have asked their scientific experts to design a radiation protection plan that is at least as low as occupational radiation exposure limits. The cost estimates for Bikini cleanup will include a separate number for worker radiation safety. As resettlement becomes a reality, the Bikinians will remain committed to acceptable environmental standards and monitoring activities for returning residents. This, too, will be part of the cleanup and resettlement plan.

III. Guarantee of Bikini Atoll's Safety

In 1968, President Lyndon Johnson, relying on a report from the Atomic Energy Commission, announced that Bikini Atoll was safe and that the people could return home. That report, as explained above, proved to be wrong.

More than thirty years later, the people of Bikini are still not back home. Bikini Atoll is being studied again, and scientists from around the world, including the United States, are telling the people once again that it is safe to go back home, at least under certain circumstances.

The Bikini people, for reasons I am sure you can understand, have not trusted U.S. Government scientists since 1968, and there is no one in their community with the expertise or training to tell them whether or not Bikini can be safely resettled and under what conditions. In light of the fact that a U.S. President told them in 1968 that they could return home and that they are again being told that they can return, they want the U.S. Government to guarantee Bikini's safety in some way.

The Bikini people raised this issue last year with Interior Secretary Bruce Babbitt, and they were disappointed in his response. He said that he lacked the legal authority to guarantee Bikini's safety, but that even if he did have the authority he would not do so. The decision, he said, was up to the Bikinians, and he urged them to turn to their own experts for advice. He also said that a written guarantee sounded more like an adversarial relationship than the one of trust that is assumed by the Compact of Free Association. The Bikinians' response is the same as President Reagan's to the Russians on arms

[12] Environmental Management: Progress & Plans of the Environmental Management Program (November 1996) (DOE/EM-0317) at 120.

control: Trust, but verify. They still want a guarantee of Bikini's safety when they return home.

## IV. Health Care

The Government of the Marshall Islands receives a $2 million annual grant under the Section 177 agreement to conduct the Section 177 health care program, which is earmarked for the peoples of the four atolls. This program has proven to be wholly inadequate, due in large part of the huge and unexpected enrollment of individuals in the four-atoll health care program. For example, in just 13 years, from 1983 to 1996, the number of people in the program rose five-fold, from 2,300 to nearly 11,500.[13] Moreover, this funding has not been adjusted for inflation, so the value of the $2 million annual payment, which began in 1988, is now greatly reduced.

As a result of the failure of this program, the Bikini community has been forced to spend more and more of its resources on health care. Health care costs have risen from $350,000 in 1994 to $850,000 for this fiscal year. After Bikini cleanup, it is the largest expenditure in the Resettlement Trust Fund.

## V. U.S.D.A. Food Program

When it passed the Compact of Free Association Act, Congress continued for five years the long-standing policy of providing supplemental U.S.D.A. food for the peoples of the four atolls. Public Law No. 99-239 § 103(h)(2). This provision was amended in 1991 to extend the program for an additional five years and again in 1997. That provision will expire at the end of the Compact period unless it is extended again by Congress.

For the people of Bikini, this program was initiated in the 1960s, before they moved back to Bikini, because Kili is less than one-ninth the size of Bikini and cannot sustain the same level of locally produced crops. Continuation of this program is critical to the survival of the Bikini people on Kili, which remains the home of most Bikinians. Conditions for those people have not changed, except that the population has almost doubled in the last thirteen years. In addition, imported food is essential to the resettlement of Bikini, as the continuation of the U.S.D.A. program will ensure that there will be no repeat of the unfortunate events of the 1970s, when inadequate supplies of U.S.D.A. food led to over-consumption of locally grown foods, with their high concentrations of radioactive cesium-137.

A program of imported food will be needed for the people of Bikini until they are living safely at Bikini Atoll, its soil has been restored and the people are able to eat safely from a diet of locally grown food. According to Dr. Mauro, this will not occur for many years. The Bikini people urge Congress to include the continuation of the U.S.D.A.

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[13] See Compact Section 177 Hearing, supra n. 5, at 345 (questions for the Department of Energy); Marshall Islands Journal, May 31, 1996, p. 3.

supplemental food program in the extension of the Compact, but without a five-year limitation and with a requirement to take into account the changing size of the population.

VI. Continuation of the Compact of Free Association

Although this is a government-to-government question to be resolved between the Government of the United States and the Government of the Marshall Islands, the lingering radiation at Bikini will last until well after 2001. The United States cannot wash its hands of the nuclear legacy in the Marshall Islands. It has a legal responsibility and moral obligation to assist the people of Bikini until they are living safely back on all their islands. See Section 103 (l) of Compact of Free Association Act of 1985, discussed above, p. 4, which declares that "it is the policy of the United States . . . [to] fulfill its responsibility for restoring Bikini Atoll to habitability. . . ." That responsibility should not be shifted to the Government of the Marshall Islands, which did not create the nuclear problems and is lacking in the resources and expertise the Bikini people need. The Bikinians hope that Congress will echo the words of Interior Secretary Babbitt, who told the Bikini leaders just one year ago that "the United States won't walk away from you or from this obligation. I feel very deeply that we have a moral commitment to you."

VII. Changed Circumstances

This issue, as you know, is covered by Article IX of the Compact Section 177 Agreement. What constitutes changed circumstances may well turn out to be a contentious issue between the two governments, but let me give you one black and white example. For years the Bikini people thought the only islands at Bikini that were vaporized were the ones near the 1954 Bravo shot. They now know from a 1968 AEC document that the area of one island in the Aerokoj-Eneman group was reduced from 67.1 acres to 25 acres, the loss of 42 acres, nearly two-thirds of the entire island. The destruction to this island from a hydrogen bomb test was more than twice as great as the damage caused by the Bravo shot, but this document, a copy of which is attached to my testimony, was not made public until last year.[14] If it had been made public during the original Compact negotiations, it would have had an impact on those negotiations.

Many other documents discovered in the last few years are beginning to tell a fuller story of the nuclear testing program in the Marshall Islands. The following are just a few examples:

- An April 1952 memorandum to AEC chairman Gordon Dean warned that "Bikini may be necessary in connection with future weapons tests, either because the

[14] November 19, 1968 correspondence from William Bonnet, Manager, AEC Honolulu Area Office, to Maj. General Edward B. Giller, USAF, Assistant General Manager for Military Applications, re "Land Area - Bikini Atoll."

1952 [Mike] test at Eniwetok may result in its elimination, or the fall-out may be so bad that we could not go back for so long that we would have to find another test site."[15]

- Another internal AEC memorandum made the same point, stating that "[i]t is possible that the tests planned for Eniwetok may result in the destruction of a part or all of the atoll. A severe shock may . . . cause the crumbling of the entire structure."[16]

- A third memorandum made the point in less bureaucratic style: "AEC may need Bikini if Eniwetok goes up with M[ike]."[17]

- The Navy in 1953 suggested evacuating the residents of Rongelap before the Bravo shot, but the Interior Department balked. "Their reaction to an enlargement of the area of activity will be apprehension and fear that . . . may place many of them in the same homeless position as the Bikini people now occupy," wrote the Trust Territory High Commissioner, the highest ranking U.S. official in Micronesia. "[T]he most probable result would be, first, a lowering of morale with a consequent reluctance to fend for themselves, followed by the expectation that the Government would provide their food in return for the land that had been taken." In urging (successfully) that the danger zone not be expanded to include Rongelap, he concluded: "This would at least avoid the necessity of informing the Marshallese of the expanded Danger Zone and so protect them and the administration from the results of what would be, at the very best, unsettling knowledge for them to have."[18]

- The AEC went along, and the results were tragic for Rongelap. As the AEC later explained the decision: "[T]he Department of the Interior was not sympathetic to removing the natives, having experienced considerable difficulty with the Bikini natives who were relocated. . . ."[19]

- And you English majors will be pleased to know that one month after the Bravo shot the AEC drew up plans to return the Rongelapese under the code name

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[15] April 9, 1952 memorandum for Gordon Dean, prepared by AEC General Manager M. W. Boyer, DOE/CIC Document No. 138945.

[16] April 10, 1952 memorandum to files by John Bugher entitled "Return of Natives to Bikini," AEC Division of Biology and Medicine, Box 326-78-3, MRA Bikini and Eniwetok, Doc. No. 9458, U.S. Department of Energy.

[17] April 7, 1952 memorandum entitled "Possible Return of Bikini Natives," DOE/CIC Document No. 103587.

[18] February 5, 1953 letter from Elbert Thomas to James P. Davis, Director, Office of Territories, U.S. Department of the Interior, Record Group 326, DMA Collection, Box 3782, U.S. Department of Energy Archives, DOE/CIC Document No. 30094.

[19] March 30, 1954 memorandum from Vincent G. Huston to Kenneth D. Nichols entitled "Chronology of Establishment of Danger Area around Pacific Proving Grounds," DOE/CIC Document No. 29635.

"Project Hardy (The Return of the Native)." At least the AEC could find something to chuckle about in this tragedy.[20]

VIII. 3% Distribution From Resettlement Trust Fund

Lastly, the Bikini people seek your support for a one-time 3% distribution from the Resettlement Trust Fund. The Bikinians have ensured the fiscal integrity of this trust fund by (1) selecting reputable U.S. banks as trustees, (2) hiring well-respected and talented investment advisors and money managers, and (3) providing for routine monthly financial statements and annual audits. Thanks to the money managers and the Bikini Council's voluntary restraint on the use of these funds, the corpus remains intact and the trust fund has earned almost 14% annually. While the income is not enough for the people's needs, I am proud to report that for 17 years, every dollar has been accounted for, annual audits are prepared, and monthly financial statements are sent to the Interior Department's Office of Insular Affairs.

The Bikini people now know that the cost of a radiological cleanup and resettlement of Bikini will greatly exceed the amount of money in the trust. As a result, it is certain that the Bikini elders, many of whom have not been back on their home islands for more than 53 years, will probably die on Kili without returning home. In light of the strength of the trust, its fiscal integrity, the lengthy time a cleanup and restoration will take (even with additional funding), and the special circumstances of the elders, the Bikinians wish to make a one-time 3% distribution from the Resettlement Trust Fund, with the understanding that the primary beneficiaries of the distribution will be the Bikini elders. Because of the excellent management of the trust fund, such a distribution will not require an appropriation of funds by Congress, nor will it diminish the original corpus of the trust. The Bikini people would also agree that the amount of such distribution be deducted from any future additional ex gratia appropriations made by the Congress into the Resettlement Trust Fund.

Let me add that the careful management and expenditure of trust fund moneys represents a major success for the Bikini community. Another is the world-class diving operation at Bikini Atoll that has completed its third successful year of operations. Indeed, Bikini recently finished second in a major dive magazine's "wish list" poll of dive locations around the world that its readers would like to visit. The Bikini dive operation was funded jointly by the Bikinians and a local Marshall Islands business, and Bikinians are employed as trained divers and boat operators. It is these types of initiatives that demonstrate that the Bikini people, if given adequate resources, can use those resources wisely and plan for their future, with full and active input from a community that is striving to regain its self-sufficiency after more than half a century with no natural resource base.

Thank you. I would be pleased to answer any questions you may have.

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[20] April 14, 1954 memorandum entitled "Project Hardy (The Return of the Native)," DOE/CIC Document No. 125302.

CONFIDENTIAL

UNITED STATES
ATOMIC ENERGY COMMISSION

HONOLULU AREA OFFICE
P. O. BOX 500
HONOLULU, HAWAII 96809

November 19, 1968

NMB 175

Maj. General Edward B. Giller, USAF
Assistant General Manager for
Military Application, HQ

ATTN: Lt. Col. A. A. Gomes, DMA, Hq.

LAND AREA - BIKINI ATOLL

Trust Territory

Reference my confidential letter HOA-1656 dated October 25, 1968. Additional research of Pre-Operation Castle records by Holmes & Narver indicates that the original area of the atoll was 1742.3 acres.

Following is a list of acreage for each island before and after testing:

| Local Island Name | Code Names Used During Testing | Pre-Castle Acreage | Post-Hardtack Acreage |
|---|---|---|---|
| Eneu | Nan | 297.81 | N/C |
| Bikini | How | 546.18 | N/C |
| Aomen Iroij Complex | Easy | 14.23 | N/C |
| Aomen Iroij Complex | Dog | 34.75 | N/C |
| Aomen Iroij Complex | Fox | 48.15 | N/C |
| Aomen Iroij Complex | George | 33.16 | N/C |
| Nam | Charlie | 151.4 | 132.13 |
| Bokonejien | Baker | 8.3 | 0 |
| Jelete | Victor | 35.85 | N/C |
| Lukoj | William | 29.56 | N/C |
| Enidrik | Uncle | 216.81 | N/C |
| Aerokoj Eneman Complex | Tare | 67.1 | 25.00 |
| Aerokoj Eneman Complex | Sugar | 47.78 | N/C |
| Aerokoj Eneman Complex | Roger | 16.13 | N/C |
| Aerokoj Eneman Complex | Peter | 46.23 | N/C |
| Aerokoj Eneman Complex | Oboe | 45.91 | N/C |
| Eonjebi | Mike | 6.20 | N/C |
| Rokere | Love | 24.51 | N/C |
| Eniairo | King | | |

GROUP 3
Downgraded at 12 year intervals; not automatically declassified

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CONFIDENTIAL

Maj. General Edward B. Giller, USAF -2- November 19, 1968

| Local Island Name | Code Names Used During Testing | Pre-Castle Acreage | Post-Hardtack Acreage |
|---|---|---|---|
| Yomyaran | Jig | 7.14 | N/C |
| Bokantuam | Item | 3.57 | N/C |
| Bokdroul | Bravo | 6.20 | N/C |
| Bokaetoutok | Alfa | 7.14 | N/C |
| Oroken | Zebra | 13.34 | N/C |
| Adrikan | Yoke | 4.14 | N/C |
| Bokbata | Able | 30.9 | 32.23 |
| Total | | 1742.3 | 1674.15 |

This completes all data requested from this office. If we can be of further assistance, please advise.

William A. Bonnet
William A. Bonnet
Manager

HOA-1773

cc: J. E. Reeves, NVOO

DMB 1/76

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Mr. DOOLITTLE. And the statement by Howard L. Hills.
[The prepared statement of Mr. Hills follows:]

STATEMENT OF HOWARD L. HILLS*

In 1982 President Reagan's Ambassador for Micronesian political status negotiations was instructed, as a result of a National Security Council interagency policy review, to seek the earliest possible termination of the U.N. trusteeship under which the U.S. had administered vast island territories in the mid-Pacific since 1947. This was for reasons the most important of which included the increasingly significant role of the U.S. Army's missile testing range at Kwajalein Atoll in the Marshall Islands in U.S. national security planning and programs.

While the international trusteeship regime gave the U.S. the legal authority to continue its strategic programs in the islands, it also gave the Soviet Union a platform in the Security Council and Trusteeship Council for propagandizing against and attempting to meddle in U.S. national security affairs, including what came to be known as the Strategic Defense Initiative. These considerations reinforced Reagan Administration determination to end the trusteeship in favor of a treaty-based relationship with a self-governing Republic of the Marshall Islands (RMI).

The single greatest obstacle to termination of the trusteeship with respect to the Marshall Islands was the difficult legacy of U.S. nuclear testing program carried out at Bikini and Enewetak from 1946 to 1958, and the unresolved question of U.S. responsibility for measures to address resulting injuries to persons and damage to lands. Following the establishment of constitutional government in the Marshall Islands, difficult negotiations regarding political status and the nuclear claims issues ensued. Although the final agreements reached in this process were imperfect and faced criticism in the RMI as well as in the United States, the RMI national government ultimately adopted a clear and unequivocal policy in support of the U.S. with respect to trusteeship termination and establishment of a bilateral strategic military alliance under the Compact of Free Association.

This enabled the U.S. to continue its strategic programs in the RMI, and the RMI achieved national sovereignty while preserving a close economic, social and political relationship with the United States. Rather than allowing the nuclear claims issue to persist in a state of legal and political controversy preventing succession of the RMI to separate sovereignty, the RMI entered into a settlement under Section 177 of the Compact under which legal proceedings in U.S. courts were terminated and mechanisms to address the testing claims in the future through bilateral political measures were instituted. The legal effects of this settlement and the intentions of the parties regarding such future measures are discussed below.

After approval of the Compact of Free Association by the U.S. Congress, including the nuclear claims settlement reached under Section 177 of that treaty, the RMI acted in concert with the U.S. in the Security Council, the Trusteeship Council and the General Assembly of the United Nations to sustain and win international acceptance of the measures taken by the U.S. in those bodies terminating the trusteeship. In the face of aggressive and high-visibility efforts led by the Soviet Union to prevent U.N. recognition of the legitimacy of the new status of the RMI and the bilateral relationship between our nations under the Compact, the RMI leadership and their diplomatic representatives stood boldly by the U.S. without wavering in a complex but successful effort to win international acceptance of this new American and RMI strategic alliance.

With RMI support and leadership in this effort a factor critical to U.S. success, the international community soon moved to recognize the relationship defined by the Compact, including the nuclear claims settlement. The U.S. goal of a successful transition from the U.N. trusteeship to a treaty-based bilateral relationship was achieved, and the SDI program activities at Kwajalein were vital to the success of U.S. global strategic policy in the 80's and 90's.

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* From February of 1982 until April of 1986, Howard Hills served as Legal Counsel and Department of Defense Advisor to the President's Personal Representative for Micronesian Status Negotiations. During this period he was assigned to the Office for Micronesian Status Negotiations (OMSN), an interagency office within the National Security Council system responsible for negotiating the Compact of Free Association and representing the Executive Branch before Congress with respect to its ratification.

Subsequent to approval of the Compact, Hills served as Counsel for Interagency Affairs in the U.S. State Department's Office for Free Associated State Affairs. That office was responsible for establishment of government-to-government relations under the Compact.

**Understanding the Nuclear Claims Settlement**

At the time the Reagan Administration undertook its policy review of unresolved issues preventing the termination of the trusteeship, there were strongly held views by some in Congress and the Federal agencies concerned that a settlement of claims arising from the testing program was untenable if not impossible. This was due to the fact that the full extent of injuries to persons and damage to property was either not yet known or not public due to national security classification policies at the time. However, it had become obvious that the measures that had been taken by the U.S. to address the effects of the testing up to that point, including *ex gratia* assistance to the affected peoples as authorized by Congress, were manifestly inadequate.

For example, Congress limited compensation to individuals from four atolls and provided such measures as $25,000 "compassionate payments" for individuals who developed thyroid tumors and had to have these organs removed. Medical treatment was provided by Federal agencies and contractors, but there were dual treatment and scientific research purposes behind much of these services, and much of the available information about the medical condition of individuals, as well as radiological conditions and related health risks in the islands, remained either classified or unavailable to the islanders in a form they could comprehend.

In the face of these and other troubling circumstances, the Carter Administration had agreed in principle that the U.S. should accept responsibility for the nuclear testing claims and terminate legal claims based on a negotiated political settlement. But an early draft of the Compact initialed by negotiators in 1980 left unanswered the question of how a settlement of claims arising from the testing program was to be structured. The Reagan Administration's policy review confirmed the need to negotiate a nuclear claims settlement based on recognition that the Marshall Islands could not emerge from trusteeship to self-government without first replacing the somewhat *ad hoc* measures that had been taken unilaterally by the U.S. up to that point with a more comprehensive program implemented bilaterally.

However, the legal position of the U.S. as represented in court submissions by the Department of Justice was that sovereign immunity, statute of limitations, political question doctrine and other legal defenses precluded U.S. courts from exercising jurisdiction or adjudicating liability in the nuclear claims. Since Congress had never extended the constitutional rights of U.S. citizens to the trusteeship territories in any form binding upon the United States, the U.S. did not acquire sovereignty under the trusteeship, and Congress did not choose to legislatively waive U.S. legal defenses so the cases could be adjudicated in the Federal courts, a negotiated bilateral settlement that provided other means to address the claims presented itself as the only available alternative to the somewhat random scheme of *ex gratia* payments previously authorized by Congress in the exercise of its political discretion.

The Carter Administration efforts to come up with a solution were stymied by strong and very explicit Congressional opposition to any settlement that expanded the compensation program beyond the four atolls identified as eligible for *ex gratia* assistance in Federal statutes (e.g. Public Law 95-134 and Public Law 96-205). At the same time, leadership of Congressional committees with jurisdiction made it clear that any settlement which ended Congressional authority to determine the adequacy of past, present or future compensation would face committed opposition in the ratification process. To address these concerns, the Reagan Administration proposed to structure the settlement in a manner consistent with existing statutes to the extent practical. In addition, to preserve the residual authority of Congress over these claims a changed circumstances provision was included under which at the request of the RMI the Congress is to consider information and injuries discovered after the settlement enters into force to determine the adequacy of measures implemented under the settlement.

The settlement reached attempted to accommodate the competing forces described above, and was then included in the Compact of Free Association signed by the United States, the Republic of the Marshall Islands, the Federated States of Micronesia and Palau in the 1982-1983 period. The Compact was approved by the U.S. Congress in 1985 and took effect in 1986 (Public Law 99-239). The nuclear claims settlement concluded pursuant to Section 177 of the Compact was expressly incorporated into the Compact, as approved by Congress in the form of a treaty and Federal statute law. As reflected in Section 177(b) of U.S. Public Law 99-239, under the final Compact the U.S. agreed to make "provisions for the just and adequate settlement of all claims which have arisen . . . or which in the future may arise" from the nuclear testing program.

Thus, one way to understand the Section 177 Agreement is as a substitute mechanism to replace the programs instituted by Congress acting unilaterally with a structured process for continuing on a bilateral basis a program of political meas-

ures to compensate and address the legacy of the nuclear tests. In accordance with the end of trusteeship status and the termination of U.S. authority over the nationals of the new republic, under this bilateral mechanism the RMI would act as sovereign on behalf of its citizens in carrying out the settlement.

In addition, the settlement provided for a 300 percent increase over the funding which Congress had previously established for making *ex gratia* payments under a series of statutes cited in Appendix A of the settlement agreement. Specifically, from 1946 to 1980 the *ex gratia* payments Congress had authorized totaled approximately $50 million for support to dislocated communities, scientific and medical programs, and cash payments to individuals. Under the Section 177 Agreement, $150 million was paid to the RMI to finance further compensation and measures through a trust fund established for that purpose.

However, it is imperative to a legally and politically correct understanding of the settlement to recognize that the amount of funding provided under the Section 177 Agreement was a political determination by the parties and was not based in whole or in part on an effort to assess or compute actual damages or just compensation for specific injuries or damage to property. Indeed, the amount provided was based on a U.S. political judgment as to the level of resources the U.S. should offer to establish and sustain the settlement politically in the RMI and Congress.

If the U.S. Congress or Executive Branch believed that litigation in the Federal courts would have resolved the legacy of the nuclear testing program in a satisfactory way, allowing the claimants their "day in court" to seek damages would have been one way to end, as opposed to fulfill, U.S. responsibility for the claims. But the U.S. believed litigation brought by Marshallese citizens in the U.S. courts would not result in a remedy, or might produce remedies unsatisfactory to the claimants and the RMI. At the same time, this would have reduced or eliminated political support in Congress and the Executive Branch for funding to establish a bilateral program to address the claims based on a continued U.S. role agreed to by the RMI under the Compact.

This, however, meant that the RMI and U.S. would have a continuing responsibility to evaluate and determine the adequacy of the political measures being taken to address the effects of the nuclear testing program based on all available knowledge and information, and on the results of the measures taken under the settlement. Thus, it would be wrong to conclude that the purpose of the Section 177 was to make the nuclear testing claims "go away" so that the Federal Government would never have to revisit the question of the adequacy of the measures implemented under the initial terms of the settlement.

To the contrary, the termination of legal process was predicated on continuation of the political determination of the adequacy of the settlement by both the RMI and the U.S. Congress. Indeed, the Preamble of the settlement states that the purpose of the agreement is to "create and maintain, in perpetuity, a means to address past, present and future consequences of the nuclear testing program."

I personally addressed these issues in statements submitted to Congress on behalf of the Reagan Administration during Congressional hearings on the Section 177 Agreement. For example, my statement for the record of the Hearing on S.J. Res. 286, Committee on Energy and Natural Resources, U.S. Senate, May 24, 1984, included the following explanation:

> "... the Marshall Islands Government may seek further assistance from Congress should changed circumstances render the terms of the agreement clearly inadequate ... In brief, the Section 177 Agreement does not foreclose further measures for the benefit of the claimants, and they will have access in the future to an impartial claims tribunal for the purposes of obtaining payments in addition to those provided under the agreement. The only requirement is that they be able to prove their claims in accordance with the procedures and standards promulgated by the tribunal in accordance with the Section 177 Agreement."

Thus, the RMI and Congress are faced in 1999 with the same questions they faced in 1982. Are the politically determined measures carried out in lieu of a legal process to adjudicate claims arising from the nuclear testing program adequate legally and morally to sustain the political, economic, and social relationship that exists between the U.S. and the Marshall Islands? Will the existing measures sustain the relationship between our peoples in the future, or do additional measures need to be taken as a result of the information and knowledge gained as a result of our experience under the Section 177 Agreement?

Currently, Mr. Hills has a law practice in Washington D.C. that includes representation of the people of Rongelap regarding the program to resettle their islands in the RMI. Rongelap resettlement is not funded or governed under the terms of the Section 177 Agreement.

Mr. DOOLITTLE. And then finally here the statement of the people of Utirik to the House Resources Committee. So without objection those statements will be admitted into the record.

[The prepared statement of the People of Utirik follows:]

**UTRIK ATOLL LOCAL GOVERNMENT/UTRIK LOCAL DISTRIBUTION AUTHORITY**

MAJURO, MARSHALL ISLANDS, 96960
Phone (692) 625-3749/3150 ~ Fax (692) 625-6077/3675

**Statement of the People of Utrik to the House Resources Committee**
**Washington, D.C., May 11, 1999**

## I.
## Introduction

The story of the Utrik people in the nuclear age is tragic. Living downwind of the test sites, the Atoll was severely contaminated by fallout from nuclear bombs detonated by the United States on nearby Islands. The radioactive dose to the people of Utrik as a result of the tests was several thousand times higher than that allowed by current United States Environmental Protection Agency standards. The effect of this on their health and well being was devastating, as the rates of cancer, thyroid desease, and birth defects skyrocketed. Today the people of Utrik seek information on the full extent of the contamination, adequate health care, and clean up of their Island home to ensure its future safety.

## II.
## Brief History of Utirk and the Nuclear Testing Program

Utrik Atoll is one of two island groups considered "downwind" of the BRAVO thermonuclear test conducted on March 1, 1954. Over 160 people were living on Utrik at the time, and the survivors can still recall the sound of the blast, and the sight of snow like particles raining down on them shortly after the explosion. Unknown to them, this "snow" was very deadly radioactive ash, and it fell in their water, food, and on their homes.

For three days the people lived with this ash, unaware of the danger it posed. The Utrik people were finally evacuated to Kwajalien on March 4, 1954, and told they were being removed because the ash that fell on them was "poison" and very dangerous. In their absence from Utrik, the United States detonated 5 more thermonuclear weapons, as part of the Castle series of tests, and as a result further radioactive debris landed on Utrik. A mere seven days after the last test, and only three months after the BRAVO shot, the people were returned to Utrik in June, 1954, and told their home was now safe. People have continuously resided on Utrik since that time, and were on the Atoll when further nuclear tests, code-named Operations Hardtack, and Redwing were conducted in the late-1950's.

## III.
## The impact of the Nuclear Testing Program on the people living on Utrik Atoll.

The early return to Utrik was to have tragic and far reaching consequences for the entire community. Utrik Atoll was not safe, and in fact was severely contaminated, and continued living on Utrik posed a deadly risk to all residents.

Behind closed doors, this danger was recognized by scientists working with the US Atomic Energy Commission. In a classified meeting of the Advisory Committee on Biology and Medicine of the Atomic Energy Commission held in 1956, a US scientist noted that Utrik was "the most contaminated place in the world..." This scientist stated, "it will be very interesting to go back and get good environmental data, and determine what isotopes are involved, so as to get a measure of the human uptake when people live in a contaminated environment." The attitude of this scientist was reflected in his casual statement "while it is true that these people do not live, I would say, the way Westerners do, civilized people, it is nevertheless also true that these people are more like us than the mice."

It is difficult to believe that those responsible for the Nuclear tests believed Utrik was a safe place to live when the people were returned in 1954. In fact, a classified report of the Health and Safety Laboratory prepared on January 18, 1955, estimated a total dosage to Utrik from only the Castle series of tests at 24,000 millirem. The atolls of Bikar, Taka, and Tongi where the Utrik people gather food received doses of 67,000, 14,000, and 370 millirem respectively. Current US Environmental Protection Agency Regulations set a standard of no more than 15 millirem for areas inhabited by human beings. Thus Utrik, Bikar and Taka were contaminated at levels several thousand times that considered safe by the United States EPA.

As late as 1994, a report estimated the cumulative dose to those living on Utrik was conservatively set at 18 millirem. This is still in excess of the EPA standard. Thus for a period of over 40 years the people of Utrik lived in dangerously contaminated environment.

The impact of living in this environment has been devastating. Not one family on Utrik has escaped the terrible consequences of the bomb. In many families one or more members have died of cancer. The list of the dead is endless. Former Mayor Harold Matthew, died at age 52 of cancer. Karok Aster, died at age 60 of cancer, Juda Lallu, died age 62 of cancer, Enta Bien, died of cancer, age 64, Jabel deBrum, died age 68, of cancer, and Carmen Yamamura died of cancer. These are just of few of many who whose lives were cut short by the bomb. Ironically, the Department of Energy does not recognize a single one of these people as having been exposed, and excluded them from its medical program.

The exposure, and absorption of radiation along with the neglect has taken its toll. Today out of a community of 700 living on Utrik, there are only 11 people over the age of 60 who are still alive. At a time when most Americans are still working, the exposed of Utrik are already in their graves.

Radiation has also killed the unborn, and maimed the young. Kern Laplaint, who was a healthy two year old at the time of exposure, stopped growing, and was left a dwarf because of the damage done to his thyroid glands. The number of stillbirths and miscarriages skyrocketed. Before the bomb only three miscarriages had occurred in recent memory, after 1952, 41 miscarriages were recorded. Only 1 stillbirth was known to have occurred before the testing. After the testing, 15 cases were documented.

After the bomb, mutations had occurred that were unknown in prior years. One women, Nine Letobo, who was interviewed several years after the testing stated: "Some women gave birth to creatures like cats, rats, and the insides of turtles-like intestines. Most of the women had

"jibun"[miscarriages], including myself who gave birth to things resembling grapes and other fruits, and some women even stopped having children, including me. Things are not the same now, and the people are not as active and healthy as before 'the bomb'."

## IV.
## The actions of those responsible for the testing program.

The response of the Department of Energy ("DOE"), has been inadequate, and may be characterized as too little, too late, or nothing at all.

The first and most significant failure of the responsible agencies was the failure to conduct a risk assessment. When the people were returned to Utrik in 1954, no in depth study had been made to ensure the safety of the Island. In addition, no measures of any kind were taken to protect the people from any possible danger. In fact, the evidence points in the opposite direction, and suggests that the people were intentionally left on a contaminated Atoll, so that they may be studied as if they were guinea pigs or lab mice.

The manner in which the DOE Medical program was carried out lends credence to such a belief. Doctor's from the Brookhaven National Lab acted more like research scientists, than health care providers, and conducted their work with a callus disregard for the needs or feelings of their patients.

A far more serious shortfall in the medical program, was it's application only to those present on the day of the BRAVO shot. Those who resided on Utrik after June 1954, are excluded. However, the health problems endemic in Utrik since the bomb has affected both those who were present on March 1, 1954, and those who lived on Utrik after June 1954. People who have thyroid disease, cancer and other radiogenic illnesses include both those on Utrik during the BRAVO test, and those who resided there after the test.

Although a secondary Healthcare exists, the 177 healthcare, this hasn't solved Utrik's healthcare needs. The 177 program is seriously under-funded, and there is no coordination between it, and the DOE program. Patients are "ping-ponged" between the two programs, and little or no coordination exists between them. Thus the health care delivery system is disjointed, confusing, and often leaves patients bewildered and lost in a bureaucratic maze.

The healthcare system also suffers from a lack of time spent on Utrik Atoll by professional staff. Utrik Atoll, is home to the majority of DOE's patients. In the past, visits to Utrik were irregular and sometimes only once a year. In several cases, people died without seeing a doctor, or even knowing what was killing them. Regular access to medical help could have saved many lives in past years.

## V.
## Remedies currently sought for the damages done by the Nuclear Testing Program.

Currently, the approximately 4,000 members of the Utrik community seek remediation for what was done to them and their Islands. Four specific remedies which will further the healing process are currently sought.

First, it is imperative that full disclosure of all information regarding the tests be made available. The Utrik people are entitled to know the full extent of the damage to their Islands. The level, and type of radioactive contamination must be fully disclosed.

Second, an independent risk assessment must be conducted to determine how severe the damage was to Utrik, Taka, Bikar and Tongi Atolls. This has never been done, and should have been done several years ago.

Third, a comprehensive and inclusive medical monitoring and treatment program for all the people of Utrik. Unlike the existing programs, the entire population should be included in a unified program designed to service the needs of the patients, and include all those who have been exposed, not just those present on March 1, 1954.

Fourth, a clean-up of Utrik Atoll should be done in order to reduce levels of radioactivity to "as low as reasonably achievable."

By accomplishing the above, those who owe a moral obligation to Utrik and its people for the damage done, will begin the process of meeting that obligation. This will accelerate the healing process so long over due and slow in coming.

## VI.
## Conclusion.

Utrik is home to the largest number of people exposed to radioactive fallout, and they have been exposed over a longer period of time than any other group in the Marshall Islands. Unlike the people of Bikini or Enewetak, they were "downwind" of most all the nuclear tests, and suffered severe health consequences as a result thereof. Today they seek full disclosure of the damage done to their persons and their land, adequate healthcare, and a clean-up of their home islands.

This document consists of 327 pages
No. 1 of 1 series, Series C

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EXIBIT: A

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ADVISORY COMMITTEE ON BIOLOGY
and MEDICINE

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U.S. ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS OFFICE
HEALTH and SAFETY LABORATORY
70 Columbus Avenue
New York, New York

[redacted]

EXIBIT: F

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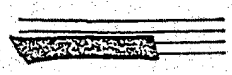
We have a few things that we are thinking about for the immediate future and I would like to mention a few of these.

We think that one very intriguing study can be made and plans are on the way to implement this -- 'Uterik' Atoll is the atoll furtherest from the March 1st shot where people were exposed got initially about 15 roentgens and then they were evacuated and they returned.

They had been living on that Island; now that Island is safe to live on but is by far the most contaminated place in the world and it will be very interesting to go back and get good environmental data, how many per square mile; what isotopes are involved and a sample of food changes in many humans through their urines, so as to get a measure of the human uptake when people live in a contaminated environment.

Now, data of this type has never been available. While it is true that these people do not live, I would say, the way Westerners do, civilized people, it is nevertheless also true that these people are more like us than the mice. So that is something which will be done this winter.



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UNITED STATES ATOMIC ENERGY COMMISSION

NEW YORK OPERATIONS OFFICE

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# RADIOACTIVE DEBRIS FROM OPERATION CASTLE

## ISLANDS OF THE MID-PACIFIC

January 18, 1955 Copy 26A

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Per H. Paulsen TSH 05-6, 5/17/94
(Sig of person authorizing change, title, org., date)

Robert T. Hardman Chief Rad Ad Hoc 5-17-94
(Sig of second reviewer, title, organization, date)

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TABLE I

CUMULATIVE DOSES BY EVENT AND LOCATION
(Finite Dose to Next Event)-mr

| EVENT | BRAVO | ROMEO | KOON | UNION | YANKEE | NECTAR | TOTAL |
|---|---|---|---|---|---|---|---|
| Days between events | 26 | 11 | 19 | 9 | 9 | 10 | |
| | | | Aerial Monitoring | | | | |
| Lae | 5.5 | 12 | 12 | 7.5 | 78 | 95 | 125 |
| Ujae | 6 | 32 | 17 | 9.5 | 48 | 1.4 | 114 |
| Wotho | 250 | 270 | 110 | 55 | 95 | 4 | 784 |
| Ailinginae | 60000* | 3400 | 3300 | 8 | 600 | 70 | 67000 |
| Rongelap | 180000* | 11000 | 6000 | 3400 | 1700 | 300 | 202000 |
| Rongerik | 190000* | 9000 | 2000 | 550 | 1400 | 280 | 206000 |
| Taongi | 280 | 60 | 9.5 | 10 | 10 | - | 370 |
| Bikar | 60000* | 3000 | 1200 | 650 | 1700 | 150 | 67000 |
| Utirik | 22000* | 1200 | 700 | 100 | 330 | 50 | 24000 |
| Taka | 15000* | 800 | 1000 | 120 | 380 | 50 | 17000 |
| Ailuk | 5000 | 410 | 110 | 100 | 500 | 20 | 6140 |
| Jemo | 1200 | 410 | 130 | 18 | 200 | 20 | 1978 |
| Likiep | 1700 | 170 | 80 | 30 | 200 | 16 | 2196 |
| Namu | 1.8 | 90 | 100 | 0 | 25 | 0 | 216 |
| Ailinglapalap | 7.2 | 140 | 100 | 8 | 0 | 0 | 255 |
| Namorik | 20 | 160 | 70 | 2 | 0 | 0 | 252 |
| Ebon | 20 | 250 | 50 | 8 | 25 | 0 | 353 |
| Kili | 20 | 200 | 70 | 0 | 0 | 1.3 | 291 |
| Jaluit | 20 | 300 | 70 | 8 | 0 | 2.6 | 401 |
| Mili | 60 | 160 | 200 | 20 | 0 | 1.3 | 441 |
| Arno | 60 | 200 | 300 | 8 | 25 | 1.3 | 594 |
| Majuro | 200 | 200 | 50 | 20 | 0 | 1.3 | 471 |
| Aur | 40 | 200 | 50 | 8 | 40 | 2.6 | 341 |
| Maloelap | 350 | 120 | 50 | 0 | 25 | 4.0 | 549 |
| Erikub | 390 | 200 | 50 | 0 | 0 | 6.5 | 647 |
| Wotje | 1800 | 300 | 200 | 13 | 220 | 10 | 2543 |

*Based on arrival estimated from Rongerik data.

Mr. DOOLITTLE. I also understand that we have a statement submitted by Mr. William Robison, who, I guess, was invited to be present but could not be. Anyway, without objection his statement will be submitted for the record.

[The prepared statement of Mr. Robison follows:]

**Dr. William L. Robison**
**Scientific Director of the**
**Marshall Island Dose Assessment and Radioecology Program**
**Lawrence Livermore National Laboratory**

The source of exposure at Bikini, Enewetak, Rongelap, and Utirik Atolls today is from four radionuclides—$^{137}Cs$, $^{90}Sr$, $^{239+240}Pu$, and $^{241}Am$. The exposure pathways at the atolls are:

- Consumption of terrestrial foods
- Consumption of marine foods
- Inhalation of resuspended soil in the air
- External gamma rays from the soil
- Consumption of cistern and ground water

We have done extensive work over the past 25 years evaluating each of these exposure pathways for all four radionuclides. In summary, the uptake of $^{137}Cs$ into terrestrial foods accounts for 85–90% of the estimated dose to returning populations. The exposure to external gamma rays from the soil (again attributable to $^{137}Cs$) accounts for about another 10% of the estimated dose. The other pathways and radionuclides account for the remaining 5%.

Because $^{137}Cs$ in terrestrial foods is the dominant contributor to the total estimated dose, we directed our research to evaluating remedial measures to eliminate $^{137}Cs$ from the soil or block the uptake of $^{137}Cs$ into food crops.

All remedial actions were evaluated against the criteria of reducing the estimated average maximum annual effective dose to about the world-wide average background effective dose of 2.4 mSv. A countermeasure is not recommended to the communities for consideration if it cannot lead to a dose below this criterion. Countermeasures evaluated to reduce the dose from $^{137}Cs$ through the terrestrial food chain include salt water irrigation (leaching), zeolites and mineral clay soil amendments that bind $^{137}Cs$, repeated cropping of contaminated vegetation, soil removal (excavation), and potassium (K) treatment. All but the last two options have been discarded as either less effective or difficult to implement or both.

Excavation of the top 30 to 40 cm of soil over the whole island will effectively reduce the potential dose, both external and internal. This option, however, would entail environmental costs, as well as high dollar cost. The removal of the top 30–40 cm of soil would carry with it the removal of essentially all of the organic material that has taken centuries to develop. The organic material contains most of the nutrients required for plant growth and increases the water-retention capacity of the coral soil. Soil removal would obviously require removing all the mature coconut trees and other trees that supply food, windbreak, and shade at the island. This option has an enormous negative ecological impact, and would thus necessitate a very long-term commitment to rebuild the soil and revegetate the island. Such a commitment would, in turn, seem to suggest

a continuous infusion of effort and expertise, the availability of which does not now seen assured. This was the driving force for evaluating other options.

Of all the other methods evaluated, the treatment with potassium (K) fertilizer is the most effective at reducing the uptake of $^{137}Cs$ into foods, the easiest to implement, and in addition, increases plant growth and productivity.

The effectiveness of K treatment at the atolls for reducing $^{137}Cs$ into food crops is shown in Attachments 1 and 2.

The black lines in Attachment 1 represent coconut trees that have received two applications of K separated by about four years. The $^{137}Cs$ concentration has remained at about 5–10% of pretreatment concentrations for 12 years. The red line in Attachment 1 figure indicates a row of coconut trees that has received no K treatment for 11 years since the initial treatment. After 11 years, the $^{137}Cs$ concentration is back to only 20% of the initial pretreatment concentration (at time zero). The results from several of our experiments indicate that the $^{137}Cs$ concentration in food crops is reduced to about 5% of pretreatment concentrations after two applications.

The figure in Attachment 2 shows the reduction of $^{137}Cs$ in coconuts relative to the to the untreated control trees in a second experiment. All experiments using K show similar results for all food crops.

Based on our experiments, I have proposed a "combined option" for the communities to consider as an alternative to removal of the top 40 cm of soil over the entire island.

The "combined option" consists of:

- Removing the surface soil (0 to 25cm) in the area where the village will be established, and for 10 to 15 m around each of the sites where houses will be built to minimize the external gamma, beta and alpha exposure in the areas where people spend most of their time. The estimated gamma dose can be reduced by 40% by such action. The Additional cost to remove about 25 cm of soil from the relatively small area included around each house and the village area would be minimal compared with the overall costs of resettlement, since scraping and clearing is required to begin construction and resettlement. There would essentially be no adverse environmental effects from such an action.

- Treating the entire agricultural area of the island, where coconut, breadfruit, and *Pandanus* fruit are growing, with potassium chloride (KCl) or complete fertilizer (nitrogen, phosphorus, and potassium) to reduce the uptake of $^{137}Cs$ into food crops. A high-potassium fertilizer can also be used in any family-type gardening for the same reason. This option reduces the estimated dose to 5% of pretreatment estimates and minimizes the environmental impact. The major portion of the island will be left intact including the mature coconut grove, the surface soil that contains nearly all of the organic material that has

taken centuries to develop, and the natural vegetation windbreaks along the shoreline. The organic soil layer is very important for growing natural vegetation and food crops; it provides most all of the nutrients required for plant growth, and increases the water retention capacity of the soils.

The effect of the "combined option" on the estimated dose is shown in Attachment 3. Reductions in the estimated dose are considerable with the "combined option." The doses at Utirik Atoll are very low and remediation is not required.

The estimated doses at the atolls using the "combined option" can be put in perspective by comparing them with average background doses in the United States and Europe. The results are shown in Attachment 4.

The average total dose (background dose plus "bomb-related" dose) at the atolls is less than the average background dose in the United States and Europe. These doses were calculated using a diet model that includes the availability of imported foods.

**ATOLL SPECIFIC**

*Utirik Atoll*

A final report on the radiological conditions at Utirik including a dose and risk assessment will be available by July. The estimated average maximum annual effective dose rate at Utirik Island is 0.037 $mSv \cdot y^{-1}$. The annual dose rate will continually decline every year due to the radiological decay of $^{137}Cs$ and loss of $^{137}Cs$ from the soil. The radiological dose today is very low and of no consequence to the health of the population. The Utirik people can live on their atoll without concern about radiological exposure and enjoy life on their islands.

*Rongelap Atoll*

The Rongelap community has adopted the "combined option" and is progressing with resettlement. The resettlement support plan to be carried out by LLNL is provided in Attachment 5. The estimated maximum annual total dose is given in Attachment 4 based on the "combined option." The dose of 0.042 mSv is very low and will continually decline.

Also, we will train two Rongelap persons as whole body counting technicians during June and July at LLNL. We will then go to Rongelap to install the whole-body-counting system, and have a final checkout with the Rongelap technicians. Subsequently, the work force and visitors can be whole body counted at any time as specified by the Rongelap technicians. See Attachment 6 for more detail.

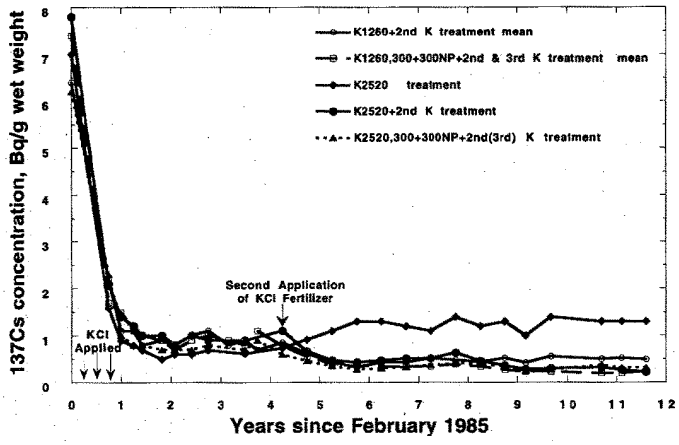
We will collect 24 hour urine samples from the work force on Rongelap Island the first week of May 1999. These samples will be analyzed for 239+240Pu to determine the amount of 239+240Pu in a person's body, if any. See Attachment 7 for more detail.

*Enewetak Atoll*
The estimated total maximum annual dose rate using the "combined option" for Enjebi Island is 0.13 mSv (see Attachment 4).

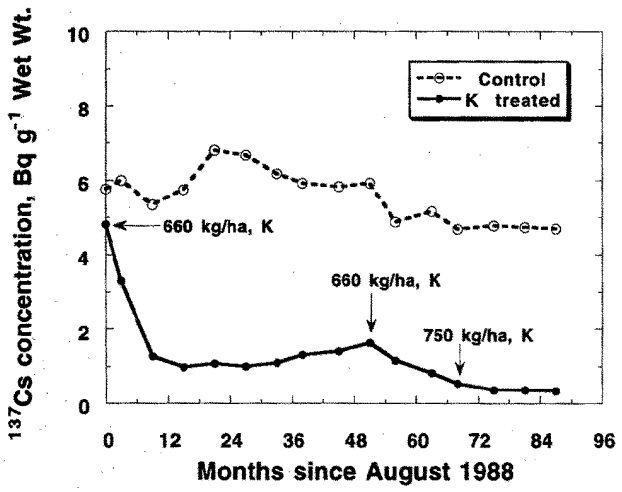
A resettlement radiological support plan similar to that given in Attachment 5 for Rongelap Island will be developed for Enjebi Island when the Enewetak people decide to begin resettlement in the northern half of the atoll.

*Bikini Atoll*
Most of our radiological and remedial measure experiments are conducted on Bikini Island. The results from these experiments are applicable to all of the northern Marshall Islands atolls. Similar experiments, although on a much smaller scale, have been conducted on Enjebi Island at Enewetak Atoll and lead to similar results. The maximum annual dose estimated for a population living on Bikini beginning in year 2000 is about 0.41 mSv when employing the "combined option"

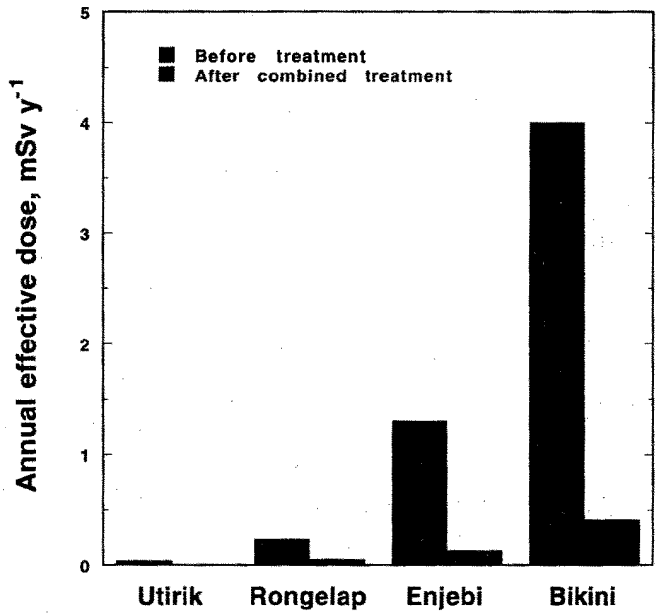
**Attachment 1. Bikini Island KNPK experiment.**



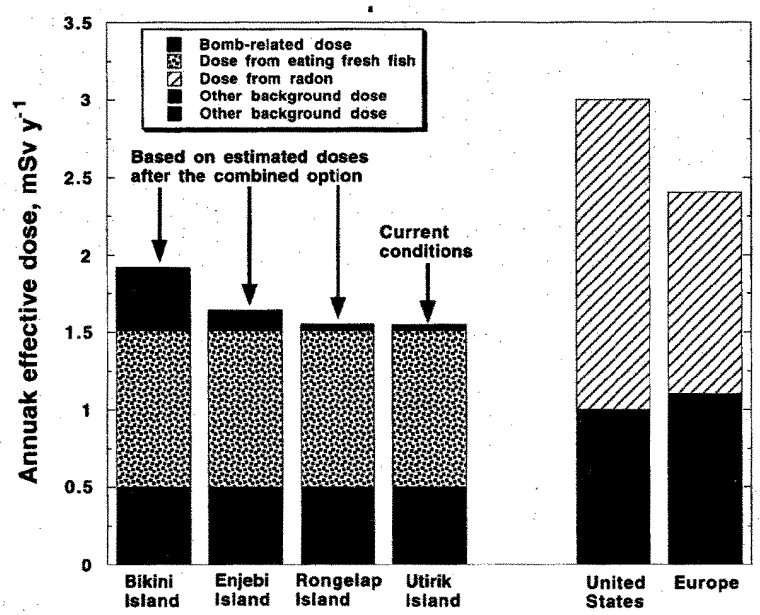
**Attachment 2. Bikini Island CLC potassium experiment.**



**Attachment 3. A comparison of the annual effective dose before and after the combined option.**



**Attachment 4. Island annual effective dose vs U.S. and Europe background dose.**



Attachment 5

## Department of Energy Environmental Monitoring Support Plan for Rongelap Resettlement Activities*

**Coordination of the Government of the Republic of the Marshall Islands (RMI Government), Rongelap Atoll Local Government (RALGOV), and RALGOV Contractor(s) with the Department of Energy (DOE).**

**Recommendation**: An official designated by the RMI Government and the Mayor of Rongelap will coordinate the phased resettlement activities at Rongelap Island with DOE's Field Operations Manager, in order to insure that DOE can schedule and perform its recommended activities under the DOE Support Plan in a timely manner.

* In conjunction with the Memorandum of Understanding among the Government of the Republic of the Marshall Islands, the Rongelap Atoll Local Government, and the Department of Energy, this Plan provides recommendations and associated recommended DOE actions that form the basis for DOE support for Rongelap resettlement.

**Use of Respirator Masks**

**Recommendation:** DOE recommends that half-face disposable respirator masks be provided for all workers directly involved in dust producing operations, and for other personnel who may be downwind during these activities. The purpose of the mask is to reduce inhalation of dust and resuspended radionuclides that are suspended in the air during activities such as soil scraping and back hoe operations.

Masks used in the medical field for controlling tuberculosis transmission have provided adequate protection in similar locations and activities. These half-face disposable masks are lightweight and cool, and are much more likely to be worn by the workers than full respirators.

The RALGOV's contractor in charge of resettlement operations is responsible for ordering and providing adequate masks to all construction operators involved in dust producing activities on Rongelap Island and to those downwind. The masks will deteriorate with frequent use, and adequate supplies should be maintained to provide replacement masks.

DOE will provide technical information to RALGOV's contractor regarding the use of half-face respirator masks.

**Monitoring of Workers**

**Monitor Construction and Other Workers with Thermoluminescent Dosimeters (TLDs)**

**Recommendation:** DOE recommends that thermoluminescent dosimeters (TLDs) be provided for all construction workers and other personnel while on Rongelap Island to provide personnel monitoring during construction activities on Rongelap Island. The TLDs provide a continuous record of exposures to gamma rays on the island.

DOE, through its contractor, will be responsible for providing: the TLDs to the workers and other personnel present on Rongelap Island during construction activities; advice to all personnel regarding the correct use of these dosimeters; and the TLD results to the workers upon return of the dosimeters. An employee of DOE's contractor will distribute the TLDs, and maintain all records of name and associated TLD number. These will be collected and analyzed by DOE's contractor at 6 month exchange cycle intervals, or when the worker leaves the island.

**Plutonium Bioassay**

**Recommendation:** DOE recommends that all heavy equipment operators currently on Rongelap Island submit urine samples for plutonium bioassay testing. DOE further recommends that all future heavy equipment operators and 50% of all other workers involved in resettlement activities undergo plutonium bioassay testing in Majuro before commencing work and after the conclusion of their employment on Rongelap Island.

DOE will [perform the plutonium bioassay tests,] **collect urine samples of all resettlement workers, DOE and RALGOV will each pay one-half the cost of plutonium bioassay analysis, and DOE** [and] will report the results thereof expeditiously to the individuals concerned and, subject to protection of those individuals' privacy, to the RMI government, RALGOV, and RALGOV's contractor.

RALGOV and RALGOV's contractor will [cooperate with DOE's plutonium bioassay testing and] facilitate workers' compliance with DOE's urine collection protocol by providing DOE reasonable advance notice of the names and Majuro arrival/departure dates of [construction and other] resettlement workers beginning and ending their employment at Rongelap Island.

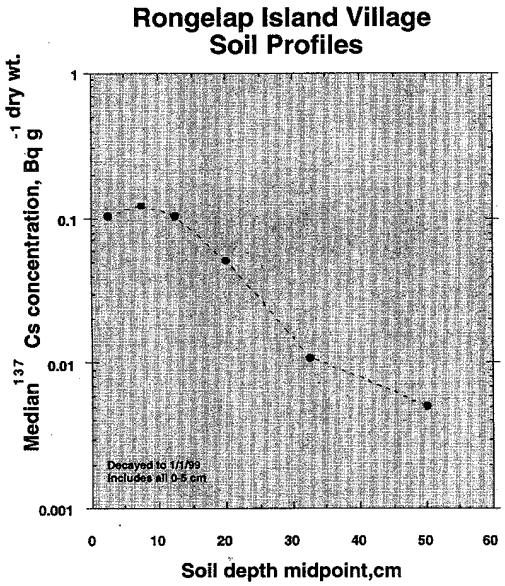
**Soil Remediation**

**Soil Removal in the Proposed Housing and Village Area of Rongelap Island**

**Recommendation:** Soil removal in the housing and village area to a depth of 25 centimeters (cm). This is based on DOE's soil profile data shown in Figure 1, and will result in a reduction of about a factor of 10 in the radioactive cesium ($^{137}Cs$) gamma exposure. The goal is to reduce the external gamma exposure to a dose of 0.01 millisievert (mSv) or less in the housing and village area. This requires an external exposure equal to or less than 0.16 micro-roentgen/hour or about 19 becquerel per kilogram of $^{137}Cs$ in the soil. The confirmation of this result will be made by *in situ* gamma spectrometry (see page 10).

The soil removal to 25 cm will essentially eliminate radioactive plutonium-239 and 240, americium-241 and strontium-90 from the housing and village area. Again, this will be verified by soil sampling and analysis.

RALGOV will provide at least six weeks' written notice to the DOE Field Operations Manager prior to the commencement of RALGOV's soil removal in the housing and village area, in order to permit DOE to schedule and perform gamma spectrometry and soil sampling and analysis in a timely manner.



**Amount, Rate, and Frequency of Potassium Chloride Fertilizer (KCl) Application to the Coconut Grove and other Agricultural Areas of Rongelap Island**

**Recommendation:** The initial amount of KCl applied by RALGOV to the agricultural areas of the island should be 1000 kilograms per hectare applied in two equal amounts with a 3 month interval. The first application (500 kilograms per hectare) should be applied in May or June at the start of the rainy season. The second 500 kilograms per hectare application could then be in August or September in the middle of the rainy season. Splitting the application of the potassium chloride is recommended to protect against a heavy rain storm immediately after application that could wash a lot of the potassium through to the ground water before the plants could absorb it.

A second application, applied in the same manner, should be made 2 years after the initial application. Coarse-crystal potassium fertilizer can be purchased to supply the required potassium.

Subsequent applications could be at 5 or 6 year intervals until year 2030.

**Community Meetings to Keep RALGOV and the Rongelapese People Apprised of DOE's Activities under the DOE Support Plan**

**Recommendation:** Upon reasonable advance written request of the RMI Government and/or RALGOV, DOE will participate in community meetings to inform RALGOV and the Rongelapese people about the results of the external gamma measurements, soil crops, agricultural survey, potassium chloride treatments, radionuclide concentrations in terrestrial food crops, agricultural practices, and the level of radiation dose to resettled residents of Rongelap. The community meetings may also include discussion of worker thermoluminescent (TLD) monitoring, the use of half-mask respirators, and reports on plutonium bioassay results. Community meetings may be used as a forum to discuss the implementation of local whole body counting and to stimulate interest of the Rongelapese people in learning the technology of whole body counting.

Community meetings may include poster displays, reports, and perhaps video presentations on these subjects.

**Data Collection and Reporting**

**Recommendation:** DOE will provide, expeditiously and in easy-to-understand written terms to the individuals concerned, the results of their whole body counting and plutonium bioassay

testing. Subject to protection of individual privacy, DOE will also provide these data to the RMI Government, RALGOV, and RALGOV's contractor.

Following the completion of analytical work and quality control, DOE will provide to the RMI Government and RALGOV all environmental monitoring data collected by DOE in conjunction with the DOE Support Plan.

DOE and the RMI Government will cooperate in [a pilot project to determine the feasibility of ] establishing a publicly-available database of the testing and monitoring data reported by DOE in connection with the DOE Support Plan.

**Collection and Analysis of Surface Soil Samples for Concentration of $^{239+240}$Pu, $^{241}$Am, and $^{90}$Sr following the Scraping of the Proposed Housing and Village Area**

DOE, through its contractor, will collect surface soil samples (0–5 centimeters (cm)) and soil profile samples (0–5 cm, 5–10 cm, 10–15 cm, 15–25 cm) will be collected in the housing and village area after soil removal, and analyzed for for radioactive cesium, strontium, plutonium and americium. The soil surface samples (0-5 cm only) will be collected on a 75 meter (m) grid throughout the housing and village area. This will provide a series of samples that, when analyzed, will give additional data on the radioactive strontium, plutonium and americium concentrations to supplement the detailed gamma spectrometry results for $^{137}$Cs. Soil profiles (0-40 cm) will be collected on a 150 m grid. This will provide a set of samples to evaluate the remaining radionuclide concentration subsequent to the soil removal in the housing and village area, and to confirm the depth distribution based on current DOE soil profile data.

RALGOV will provide at least six weeks' written notice to the DOE Field Operations Manager prior to the commencement of RALGOV's scraping of the housing and village area following soil removal, in order to permit DOE to schedule and perform surface soil collection and analysis in a timely manner.

***In Situ* Gamma Spectrometry to Confirm the Effectiveness of Soil Removal in the Housing and Village Area**

Field-adapted gamma spectrometers will be used by DOE's contractor to measure the gamma exposure rate from $^{137}$Cs after soil removal to 25 centimeter (cm) depth before any construction begins or crushed coral is added. This will provide the necessary data to evaluate the effectiveness of the soil removal.

The measurement will be made on a 25 meter (m) grid throughout the housing and village area. This will provide nearly overlapping coverage within the area. The data points will be averaged

over approximately 0.5 hectare area increments to estimate the external gamma exposure rate throughout the village area.

External gamma measurements for $^{137}Cs$ also will be made after the housing and other infrastructure construction is complete, and crushed coral has been placed around the houses and village area. Again, the measurements will be made on a 25 m grid and in addition on the 4 sides of each house. This will provide an initial assessment of the external gamma exposure rate at the time of resettlement.

RALGOV will provide at least six weeks' written notice to the DOE Field Operations Manager prior to the commencement of any construction or application of crushed coral in the housing and village area, in order to permit DOE to schedule and perform *in situ* gamma spectrometry in a timely manner.

**Collect Groundwater Samples from Wells and Analyze for Radioactive Cesium, Strontium, Plutonium and Americium ($^{137}Cs$, $^{90}Sr$, $^{239+240}Pu$, and $^{241}Am$)**

DOE, through its contractor, will provide well water sampling and analysis when the wells are first established. The water samples will be analyzed for radioactive cesium, strontium, americium and plutonium to provide a baseline for the levels of these radionuclides in the groundwater prior to resettlement.

Four years post resettlement, DOE will once again sample these wells and analyze for the same radionuclides, to establish the radionuclide concentrations under resettlement steady-state conditions.

**Observe Application of KCl**

DOE, through its contractor, will observe the actual quantity of potassium chloride fertilizer dispersed per square meter of ground surface to ensure that the appropriate deposition of 1000 kilograms per hectare of potassium is attained. The deposition rate is dependent on the equipment and method used for dispersal so this will have to be addressed in real time when this process is ready to begin.

RALGOV will provide at least six weeks' written notice to the DOE Field Operations Manager prior to the commencement of RALGOV's application of KCl fertilizer, in order to permit DOE to schedule the presence of technical personnel in a timely manner.

**Collect and Analyze Food Crops for $^{137}Cs$ after the Application of KCl**

Coconuts, breadfruit, and *Pandanus* and other foods locally grown and consumed on Rongelap Island will be collected 1 year after the first KCl application. It will take this long to go from the inflorescence bud to the drinking stage in coconuts (one complete cycle), and to go through one cycle of *Pandanus* and breadfruit development. DOE, through its contractor, will collect samples from trees for which previous data exists (i.e., before KCl treatment). Coconuts will be collected from trees on the 100 meter (m) grid previously established on the island and for which DOE has data. Breadfruit and *Pandanus* will be collected from those trees DOE has previously sampled. All of these samples will be analyzed for $^{137}Cs$. This will document the initial reduction in $^{137}Cs$ in the fruits.

A second collection will be made 2 years after the initial application to determine the steady state conditions resulting from the first application.

Additional collections will be made in the first and second years after the second application of potassium chloride fertilizer. These results will indicate the final reduction that will be achieved for the $^{137}Cs$ in food crops.

**Provide RALGOV with a Recommended Agricultural Procedures Document Developed by DOE.**

DOE will provide an agricultural practices document that states the planting and harvesting methods that have been found successful in growing local products. It will include information on optimal soil preparation techniques, planting depths, trace mineral applications, and major nutrient fertilizer for coconut, breadfruit, *Pandanus,* and other foods locally grown and consumed at Rongelap Island. Where possible, the difference between recommended practices and historic methods will be illustrated.

**Whole Body Counting and Health Physics Issues Relevant to the Resettlement of Rongelap**

To improve understanding of local radiological conditions, to address public safety concerns, and to permit whole body counting [of resettled Rongelapese] on demand, DOE will assist the Rongelap community to establish a Whole Body Counting (WBC) facility on Rongelap Island. DOE will maintain quality assurance and quality control of the WBC data and will specify the data to be retrieved and reported.

DOE will also implement a training and education program for [resettled] Rongelapese who have suitable qualifications. This could be coordinated with DOE's environmental missions to the Marshall Islands and through the existing Technical Cooperation Program with IAEA.

Training and technical assistance will be focused on four main topics, to include:

(1) Operation and maintenance of a WBC Facility
(2) Evaluation and interpretation of WBC data
(3) Environmental radioactivity, health physics and dosimetry
(4) Development of agricultural practices to minimize the uptake of $^{137}Cs$ in locally grown produce

Two individuals who meet DOE-established technical qualifications will be hired, for up to 20 hours per week each, at a salary of $5.00 per hour.

The Rongelap technical assistance program will be coordinated through DOE's contractor. A strong emphasis will be placed on practical instruction, data interpretation and some basic underlying theory. More advanced training could be offered through the International Atomic Energy Agency (IAEA) fellowship program should funding become available and trainees meet educational requirements. This would allow trainees to work at a suitable facility outside the Marshall Islands for extended periods of time. In the longer term, it may be possible to request IAEA assistance in organizing and funding a national radiological training course.

Attachment 6

## Whole Body Counting

**What Is Whole Body Counting?**
Whole body counting is a measurement technique that provides information to people on the amount of cesium they have in their bodies at the time of the measurement.

**What Is the Purpose of Whole Body Counting at Enewetak and Rongelap?**
Whole body counting provides a direct measure of the amount of cesium in individuals' bodies during and after resettlement. It will help people feel more comfortable about resettlement by providing reassurance that cesium exposures are below levels where health is known to be affected.

**What will a Person's Whole Body Count Report Show?**
Each person will be given a report showing the amount of cesium that is present in his or her body. The report will include information, presented in easy to understand terms, to explain the health implications (if any) associated with the cesium level found in the person's body.

**Who Should Be Whole Body Counted and How Often?**
The Whole Body Counting service will be made available to all interested members of the Rongelap and Enewetak communities at scheduled intervals to be determined by the local people and their leaders, together with trained technicians.

**What is the Department of Energy's Role (DOE) in This Effort?**
DOE's initial effort will be to train two qualified residents from both Rongelap and Enewetak as whole body counting technicians. This training will be done at the Lawrence Livermore National Laboratory. On both islands, DOE will set up whole body counting systems, provide for daily contact with local technicians by satellite telephone and fax, and maintain the resulting database. DOE will be responsible for quality assurance/quality control, data management and reporting, and maintaining the whole body counting systems in operating condition.

**What are the Trained Technicians' Roles in This Effort?**
The technicians from Rongelap and Enewetak will run the whole body counting system and make sure the equipment is working properly. The technicians will transmit by facsimile to Lawrence Livermore the daily, weekly, and monthly information that demonstrates that the equipment is working properly. They will also transmit whole body counting data to Lawrence Livermore by satellite transmission on a weekly basis so the data can be analyzed and relayed back to Rongelap and Enewetak for reporting to the individuals concerned.

Attachment 7

## Plutonium Urinanalysis Monitoring

**What Is Plutonium Urinanalysis?**

Plutonium urinanalysis is a very sensitive technique used to determine the amount (burden) of plutonium in human urine and, consequently, to monitor human exposure to plutonium.

**What is the Purpose of Measuring the Plutonium Burden in Human Urine at Enewetak and Rongelap Atolls?**

Urinanalysis monitoring programs are largely designed to demonstrate that workers exposed to radioactive materials (or otherwise potentially exposed individuals) are receiving adequate protection from internal contamination. Experience shows that the monitoring of individuals within a general population group is seldom required to reliably assess radiation exposures and doses. The main pathway for plutonium exposure is through inhalation of contaminated dust particles in air that people breathe. Reliable dose estimates at any specific location requires knowledge about the form and behavior of the contaminating matrix, e.g. aerodynamic properties of the soil, but the potential for inhalation exposure will generally increase with an increase in the concentration of plutonium in soils where the people are living. Consequently, justification for establishing a monitoring program to determine the plutonium burden in human urine should be assessed on the basis of changed circumstances associated with resettlement on islands with elevated levels of plutonium, and/or for monitoring of unusual work environments or practices. Resettlement of Rongelap Island (Rongelap Atoll) and Enjebi Island (Enewetak Atoll) would be consistent with these requirements. However, there appears to no viable justification for continued monitoring of plutonium in human urine of residents living on Enewetak Island because plutonium concentrations in surface soils (and in air) are at or near world-wide fallout levels, and DOE has already collected sufficient urinanalysis data to document that exposures to plutonium are negligible.

In the case of a resettlement scenario, the implementation of a limited urinanalysis program would be consistent with the basic principles of radiation protection in a work place environment and help satisfy the safety culture of resettled populations; it avoids fears, and ultimately will help DOE document and reassure workers and the resettled population that they are receiving adequate protection from potential exposures to plutonium.

**What will the Measurements Show?**

Plutonium urinanalysis is a measurement technique that ultimately provides information to individuals on the amount of plutonium they have in their bodies. Each person will be given a report showing the amount of plutonium that is present in his or her urine. The

report will include information, presented in easy to understand terms, to explain the health implications (if any) associated with the predicted levels of exposure and systemic deposition of plutonium in the person's body.

**Who Should be Included in the Plutonium Urinanalysis Monitoring Program and How Often Should Sampies be Collected?**

Predicted levels of plutonium exposure to the resettlement workforce on Rongelap Atoll do not necessitate the need for routine urinanalysis monitoring of the total workforce. Rather we suggest that a statistical number of workers, e.g., 50% of the predicted maximum workforce, be asked to submit urine samples at the time they join the workforce and again as they leave. If significant exposure under unusual work conditions cannot be ruled out, then routine urinanalysis monitoring should be performed on all individual workers every 3-6 months. In this case, a fundamental objective of the monitoring program would be to provide timely individual assessments that allow for corrective actions against unnecessary or avoidable exposures, and where the employer may rely on a better observation of work practices.

Justification and optimization for plutonium urinanalysis monitoring of the resettled Rongelap populations need only be considered for a limited period of time, e.g., over 3-5 years, on a select representative sub-group of residents. These individuals should be identified and asked to submit a urine sample prior to resettlement and yearly collections made during the first three years of resettlement. The final number (and collection frequency) of people to be included in the Rongelap resettlement urinanalysis monitoring program will be established on the basis of updated environmental assessments and resuspension studies conducted during the initial phases of resettlement.

No urinanalyses are required at Enewetak Atoll until there is a serious move towards resettlement of Enjebi Island.

**What is the Department of Energy's Role (DOE) in This Effort?**

DOE's initial effort will be to setup a well-defined plutonium urinanalysis monitoring program in conjunction with resettlement activities on Rongelap Atoll. Scientists from Lawrence Livermore National Laboratory will be responsible for establishing protocols for the collection and preservation of urine samples for shipment to the United States for subsequent analysis either at LLNL or by a contacting laboratory. DOE/LLNL will also be responsible for sample integrity control, quality assurance/quality control, data management and reporting.

Mr. DOOLITTLE. We have three witnesses on this panel. The Honorable Oscar deBrum, chairman of the Nuclear Claims Tribunal, Majuro, Marshall Islands; Dr. John Mauro from Sanford Cohen and Associates, McLean, Virginia; and Mr. Allan C. B. Richardson, scientific consultant to the people of Enewetak in Bethesda, Maryland.

Gentlemen, we welcome you and Mr. deBrum, you are recognized for your statement.

**STATEMENT OF HON. OSCAR deBRUM, CHAIRMAN, NUCLEAR CLAIMS TRIBUNAL**

Mr. OSCAR DEBRUM. Thank you, Mr. Chairman, and good morning members of the Committee. On behalf of my fellow judges and officers and staff of the Nuclear Claim tribunal, I would like to express our gratitude to you for conducting this oversight hearing on the status of nuclear issues in the Marshall Islands.

I am honored to have been asked to testify before this Committee and its predecessor for many years, but I am now among the rapidly dwindling group of men and women whose experience with Americans spans the entirety of our people's association with you.

I was a young man, young boy, 15 years of age, attending Japanese school in Jaluit in 1944 when I beheld the sight which I will never forget as long as I live. The arrival of an enormous fleet of new American warships the size of which I could never have imagined in my wildest dreams.

With the American administration which followed the defeat of the Japanese forces in the Marshall Islands, I quickly came to learn firsthand of the American spirit of generosity and kindness as well as the courage of American servicemen who came from all walks of life, from all parts of your country, great country, to fight the distant war to preserve your democracy and expand your democratic principles to the world.

It has been my profound conviction since your countrymen came to our shore over a century ago that America's intentions are honorable and its motives are noble. But to us, a phrase used frequently in this setting and I quote, "mistakes were made." And as a result of that most notorious law, the law of unintended consequences, our people became the victim of American policies which were meant only to develop a deterrent to and to prevent future wars.

Mr. Chairman, if you were chairing a hearing of our tribunal instead of chairing this hearing today, you would find it as difficult as I do to explain unintended consequences, a policy to a family which has experienced real suffering as a result of those policies. These real human stories are what I am here today and I hear also every day, day after day, as the tribunal is charged with the responsibility of making final determination of Marshallese claims related to the nuclear testing program.

The challenge has been to address these claims in a manner which is both fair to the claimants and rational and justifiable in view of the evidence available. Throughout its existence, the tribunal has sought information and expert advise about the testing program and its effect on human health from a wide variety of sources.

In late 1990 the tribunal became aware of U.S. legislation known as the Downwinders' Act, which had been passed into law by the Congress earlier that year. In that Act the Congress established a program of compensation on a presumptive basis for specified diseases to U.S. civilians who were physically present in any affected area during the period of nuclear testing in Nevada.

The tribunal saw that such a presumptive approach reflected both the needs for an efficient, simple, and cost-effective program and a recognition of the difficulties of individual proof of causation associated with the injuries due to the exposure to ionizing radiation.

Between 1946 and 1958, the United States conducted 67 nuclear tests in the Marshall Islands, all of which were atmospheric. The most powerful of these tests was the BRAVO shot, a 15-megaton device detonated on March 1, 1954, at Bikini atoll. That test alone was the equivalent to 1,000 Hiroshima bombs that ended the second world war.

While the BRAVO shot is well known, 17 other tests in the Marshall Islands were in the megaton range and total yield of which was—of the 67 tests was 108 megatons, the equivalent of more than 7,000 Hiroshima bombs and 93 times the total of Nevada atmospheric tests.

Further, the U.S. Center for Disease Control in July 1998 estimated that 6.3 billion curies of radioactive iodine-131 was released to the atmosphere as a result of the testing in the Marshall Islands. That amount is 42 times the 150 million curies released as a result of the testing in Nevada.

The tribunal's Personal Injury Compensation Program was established by regulation in 1991 and includes the diseases identified in the Downwinders programs and additional diseases for which there was credible evidence from the research findings of the studies of the Japanese atom bomb survivors conducted by the Radiation Effects Research Foundation and from the conclusion contained in the 1990 report of the National Academy of Science Committee on Biological Affects of Ionizing Radiation.

Also pending before the tribunal are many claims for damage to property. A major category of damage in the class-action property claim is for cleanup of these areas. In December, the December—the tribunal issued a written decision in which it adopted the policies and criteria set out by the U.S. Environmental Protection Agency for dealing with certain sites with radioactive contamination.

In 1997 the EPA directed that if a dose assessment is conducted at the site, then 15 millirems per year effective dose equivalent should generally be the maximum dose limit for humans. To date, no compensation has been awarded for property damage, but the first such award should be made within the next few months.

One of the main issues that I wanted to address in my testimony today is the immediate shortfall of funds for payment of personal injury award. As of April 30, 1999, a total of $67.7 million has been awarded on behalf of 1,613 individuals for personal injuries. This compares to a common total agreement—total agreement—excuse me, sir—1,509 award totaling $75.4 million that had been made under the Downwinders' program.

But the tribunal is now nearly $23 million short of being able to fully compensate all of the justified claims of physical effects of the test. It particularly pains me that our tribunal continues to fall short of its ability to ease our people's suffering from financial compensation because our fund is manifestly inadequate for this purpose because we are obliged to make payment in installments rather than make full payment on award.

Six hundred and thirty two people have already died without receiving full compensation for their personal injuries. The situation makes it necessary to make this appeal to you personally on behalf of the awardees who believe that the best solution is to request a lump sum payment from the U.S. so that the award to the deceased people and others who are suffering from terminal medical conditions may be paid in full quickly as possible.

As detailed in my written submission, the amount clearly needed is approximately $22.9 million. In short, Mr. Chairman, we need your help, and I hope that the Committee will provide guidance in how to formally request for this amount and how we can best pursue it effectively and efficiently.

In conclusion, there was much that was proper and appropriate in the 177 agreement, but time and experience have demonstrated that the funding of the activities and the program specifically provided for in the agreement was inadequate.

Thank you, Mr. Chairman for hearing our testimony. We will be very happy to answer any questions you might have. Thank you, sir.

Mr. DOOLITTLE. Thank you, sir.

[The prepared statement of Mr. deBrum follows:]

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**STATEMENT OF OSCAR DEBRUM**
**CHAIRMAN, NUCLEAR CLAIMS TRIBUNAL**
**REPUBLIC OF THE MARSHALL ISLANDS**
**BEFORE**
**THE COMMITTEE ON RESOURCES**
**UNITED STATES HOUSE OF REPRESENTATIVES**
**MAY 11, 1999**

Good morning, Mr. Chairman and Members of the Committee.

On behalf of my fellow Judges and the Officers and staff of the Nuclear Claims Tribunal, I would like to express our gratitude to you for conducting this oversight hearing on the status of nuclear issues in the Marshall Islands.

I am pleased to be able to share with you today the perspective of the Nuclear Claims Tribunal on a number of those issues. In doing so, I wish to note that this perspective is both unique and encompassing.

The Tribunal was established in accordance with the Agreement Between the Government of the United States and the Government of the Marshall Islands for the Implementation of Section 177 of the Compact of Free Association (177 Agreement). Section 177 of the Compact provides that "The Government of the United States accepts the responsibility for compensation owing . . . for loss or damage to property and person of the citizens of the Marshall Islands . . . resulting from the nuclear testing program which the Government of the United States conducted in the Northern Marshall Islands."

The Preamble of the 177 Agreement recognizes the "contributions and sacrifices made by the people of the Marshall Islands in regard to the Nuclear Testing Program; the authority and responsibility of the Government of the Marshall Islands to provide for the welfare of all the people of the Marshall Islands; and the expressed desire of the Government of the Marshall Islands to create and maintain, in perpetuity, a means to address past, present and future consequences of the Nuclear Testing Program, including the resolution of resultant claims."

I firmly believe that it was appropriate for there to be a separate agreement to the Compact setting forth provisions for the just and adequate settlement of all such claims and for administration of medical surveillance and treatment programs and radiological monitoring activities by the Republic of the Marshall Islands.

Under the 177 Agreement, the United States provided to the Marshall Islands the sum of $150 million as a financial settlement for the damages caused by the nuclear testing program. That money was used to create a fund intended to generate average annual proceeds of at least $18 million per year throughout the 15-year period of the Compact of Free Association which will end in the year 2001. For the record, I will summarize the various purposes for which the total of $270 million in annual proceeds is to be used and make brief comments on each such purpose.

Under Article II, Section 1(a) of the 177 Agreement, $30 million ($2 million per year) is made available to the Government of the Marshall Islands to provide health care programs related to the consequences of the Nuclear Testing Program. I believe that it

was appropriate for the Agreement to include funding for the RMI to carry out such programs. I would note, however, that while the extent of that program's capability to diagnose, treat, and implement broad preventive activities for the many serious medical conditions that have arisen has been compromised somewhat by the large number of people enrolled in it, it should be understood that by virtually any standard the program is grossly underfunded. Health care costs throughout the world have risen dramatically since the Agreement was concluded nearly 16 years ago, but the 177 Health Care Program continues to receive the same amount of funding level every year. When that funding proves inadequate, the RMI health care system must ultimately either bear the financial burden of providing treatment or of making the difficult decision to deny treatment to many patients due to inadequate resources.

Under Article II, Section 1(e), $3 million ($1 million per year for the first three years) was made available to the Government of the Marshall Islands for conducting medical surveillance and radiological monitoring activities. I believe that it was appropriate for the Agreement to include such funding. Unfortunately, as is often the case when this type of activity actually takes place, the results of the medical surveillance and radiological monitoring programs supported by the Section 177 funding raised more questions than they answered.

For a three-year period from 1990 to 1993, funding provided under the 177 Agreement supported a nationwide medical diagnostic program. The RMI employed licensed and experienced medical doctors of internal medicine, a pediatrician, physician's assistants, and support/translation staff to conduct physical examination and sick call clinics in every major village in every atoll in the nation. Many villages were visited on more than one occasion for clinics of up to one week duration. Although extremely limited diagnostic equipment was available to these dedicated medical professionals, nevertheless dozens of the patients that they referred to our main hospital in Majuro for further investigation were found to have a cancer or a serious thyroid condition. The cost of the additional diagnostic work and of the treatment of those conditions had to be borne by the RMI health care system.

The nationwide medical diagnostic program had to be terminated when the funding available under the 177 Agreement was exhausted. As a result of there being no such program, the RMI health care system has encountered an increasing number of patients from the outer islands who present to the hospitals in Majuro and Ebeye with such advanced cancers that no effective treatment can be provided.

Another program of medical surveillance was carried out during 1993 on Ebeye Island in the Kwajalein atoll. There, Japanese doctors and ultrasonagraphers contracted by the RMI Nationwide Radiological Survey conducted thyroid examinations of more than 1,300 Marshallese who had resided at various atolls within the country during the nuclear testing period. The overall results of those examinations were so astounding that the RMI government was forced to spend additional funds to replicate the program in Majuro, where 5,000 people were examined in 1994.

The findings of those studies only confirmed earlier documented conclusions that there is an extremely high incidence of thyroid diseases among people in the Marshall Islands. But with the 177 funding exhausted, the RMI had to bear the burden of providing treatment for many of the individuals whose conditions warranted medical intervention. In addition, the studies were unable to progress to their next obvious step, that of determining the primary cause of the various forms of thyroid disease in the RMI.

Nevertheless, the issue has drawn the attention of the U.S. Center for Disease Control and Prevention (CDC) in Atlanta which has received approval by the National Academy of Sciences for a protocol to be followed in carrying out a major thyroid disease study throughout the Marshall Islands. The RMI will cooperate and be a part of that study and strongly endorses the necessary funding support for it.

With regard to radiological monitoring, the RMI Nationwide Radiological Survey tested thousands of soil, plant, and marine samples collected from throughout the nation and confirmed the ongoing existence of unsafe levels of radiation at dozens of islands. Due primarily to a limited budget, however, the survey was unable to make a definitive statement about the radiological safety of many other islands and atolls.

A pressing need exists for more medical surveillance and radiological monitoring activities, yet none have been supported by the 177 Agreement during the past four years due to the exhaustion of funding.

Under Article II, Sections 2-5, varying amounts are provided to the People of Bikini, the People of Enewetak, the People of Rongelap and the People of Utrik. I believe that it was appropriate for the Agreement to provide direct funding to the people of these atolls, acknowledged as the four most affected by the nuclear testing program. As required by the Agreement, more than half of that funding has been used by the local governments of those atolls, operating as Local Distribution Authorities (LDAs), to establish trust funds which will help to provide for the needs of their people in perpetuity. The balance of that funding is used by those LDAs to make quarterly distributions to their people which help in an important but largely symbolic manner to acknowledge some of the hardships suffered by them.

Under Article II, Section 6, the Agreement provides $7.5 million ($500,000 per year) for the establishment and operation of the Nuclear Claims Tribunal and $45.75 million ($2.25 million per year for the first three years and $3.25 million per year for the final 12 years) for payment of monetary awards made by the Tribunal. I believe that it was appropriate for the Agreement to provide that a Tribunal be established to serve as the "alternative forum" for resolution of the thousands of claims that were dismissed by the U.S. Court of Claims as a result of the 177 Agreement and the attendant espousal of those claims by the RMI.

Article IV, Section 1(a) of the 177 Agreement provides that the Tribunal "shall have jurisdiction to render final determination upon all claims past, present and future, of the Government, citizens and nationals of the Marshall Islands which are based on, arise out of, or are in any way related to the Nuclear Testing Program, and disputes arising from distributions under Articles II and III of this Agreement."

That is an extremely broad and difficult mandate. But it is one which I believe the Tribunal has addressed in a manner which properly reflects "reference to the laws of the Marshall Islands, including traditional law, to international law and . . . to the laws of the United States." [Article IV, Section 2]

It is also my belief that the work of the Tribunal, in keeping with the provisions of what is, in all reality, a solemn treaty between our two sovereign nations, has been both fair to the many claimants before it and eminently justifiable in view of the evidence that continues to emerge in regard to the damages resulting from the Nuclear Testing Program.

The Nuclear Testing Program in the Marshall Islands

During the period from June 30, 1946, to August 18, 1958, the United States conducted 67 nuclear tests in the Marshall Islands, all of which were considered atmospheric. The most powerful of those tests was the "Bravo" shot, a 15 megaton device detonated on March 1, 1954, at Bikini atoll. That test alone was equivalent to 1,000 Hiroshima bombs.

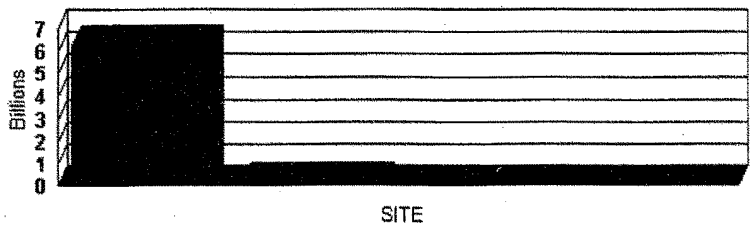
While the Bravo test is well known, it should be acknowledged that 17 other tests in the Marshall Islands were in the megaton range and the total yield of the 67 tests was 108 megatons, the equivalent of more than 7,000 Hiroshima bombs.

For the sake of comparison, it may be noted that from 1945 to 1988, the U.S. conducted a total of 930 known nuclear tests with a combined yield estimated to be 174 megatons. Approximately 137 megatons of that total was detonated in the atmosphere. In other words, while the number of tests conducted in the Marshall Islands represents only about 14% of all U.S. tests, the yield of the tests in the Marshalls comprised nearly 80% of the atmospheric total detonated by the U.S. This is not surprising considering that 33 of the tests in the Marshall Islands had greater yields than the largest atmospheric test in Nevada.

Further evidence of the huge disparity between the testing done in the Marshall Islands and that done
in Nevada was presented to officials of the Republic of the Marshall Islands and the Nuclear Claims
Tribunal in July 1998 by staff from the U.S. CDC. CDC estimated that more than six billion curies of I-131 was released to the atmosphere as a result of the testing in the Marshall Islands. That amount is 42 times the approximately 150 million curies released as a result of testing at the Nevada test site. Those of you familiar with the U.S. National

Cancer Institute study released in 1997 will be aware that I-131 is a radionuclide which concentrates in and may cause damage, including cancer, to the thyroid.

**APPROXIMATE Level of Iodine-131 Released to the Atmosphere from Selected Nuclear Events (Curies)**




| Marshall Islands | Nevada Test Site | Chernobyl | Hanford Operations |
|---|---|---|---|
| 6,300,000,000 | 150,000,000 | 40,000,000 | 739,000 |

The Tribunal's Approach to Personal Injury Compensation

Throughout its existence, the Tribunal has sought information and expert advice about the testing program and its effects on human health from a wide variety of sources. The Tribunal is authorized by statute to issue regulations "establishing a list of medical conditions which are irrebuttably presumed to be the result of the Nuclear Testing Program." However, numerous officials and experts with whom the Tribunal consulted during its early years advised against making any such presumption. Instead, they recommended that the Tribunal follow the precedent established by various courts in radiation-damage lawsuits by requiring proof of causation or, at a minimum, a demonstrated probability that a compensable medical condition was the result of an individual's exposure to radiation from the testing program.

But when the Tribunal attempted to obtain information from the U.S. about the levels of radiation to which people residing on the various atolls and islands had been exposed, virtually the only information forthcoming was for those whom the U.S. had admitted exposure — the people who had been on Rongelap or Utrik on March 1, 1954.

Without reliable information about the exposure level of individuals who had been living on other atolls, there could be no proof or showing of a probability that radiation had caused the medical conditions suffered by those individuals. And without such proof, the thousands of personal injury claims pending before the Tribunal would all have to be dismissed.

In late 1990, however, the Tribunal became aware of U.S. legislation known as the "Downwinders' Act" which had been passed into law by the Congress earlier that year. In that Act, the Congress found that fallout emitted from the atmospheric nuclear tests conducted at the Nevada Test Site exposed American civilians "to radiation that is presumed to have generated an excess of cancers among those individuals." Based on that finding, the Congress established a program which provides compensation for specified diseases to U.S. civilians who were physically present in any "affected area" during the periods of atmospheric testing in Nevada (between January 1951 and October 1958 or during July 1962).

Such a presumptive approach was precisely what the Tribunal had been authorized to employ by its enabling legislation. And it clearly reflected both the need for an efficient, simple and cost-effective program and the recognition of the difficulties of individual proof of causation associated with injuries due to exposures to ionizing radiation.

The affected area defined in the U.S. Downwinders legislation includes at least 15 counties covering more than 83,000 square miles in the states of Nevada, Utah and Arizona. Places as far as 443 miles away from the Nevada Test Site are included in the affected area. Information published on the World Wide Web by the National Cancer Institute (NCI), National Institutes of Health, indicates that 104 atmospheric nuclear tests were conducted at the Nevada Test Site during the periods specified under the Downwinders Act. The total yield of those tests was approximately 1.16 megatons.

Given the fact that the total yield of the tests conducted in the Marshall Islands was approximately 93 times the total of the Nevada atmospheric tests, there was more than adequate justification for the Tribunal to presume that the affected area for its program should encompass all of the nation's atolls and islands. Attachment A shows the relative affected areas of the two programs.

The Tribunal began to implement its personal injury compensation program in August 1991. Like the U.S. Downwinders' program, the Tribunal's program involved two presumptions. First, residency in the Marshall Islands was used as the basis for assuming exposure to levels of ionizing radiation sufficient to induce one or more of the listed medical conditions. Second, the manifestation of a radiogenic medical condition is presumed to result from (i.e. was caused by) the assumed exposure to radiation due to the testing program.

In adopting this approach, the Tribunal concluded that the failure of the U.S. to maintain contemporaneous exposure data during and after the testing period, the lack of advanced medical diagnostic services, and the absence of baseline non-radiation risk factors for people of the Marshall Islands all combined to make the "presumed list" method of assessing claims both reasonable and fair.

Compensable Medical Conditions and Awards

The original list of compensable medical conditions established by Tribunal regulation in 1991 included 25 specific diseases (see numbers 1-25 in Attachment B). That list was based on the diseases identified in the Downwinders' program and on an assessment by the Tribunal of additional medical conditions for which there was credible evidence showing a significant statistical relationship between exposure to radiation and the subsequent development of the disease.

In making this latter determination, the Tribunal looked principally to the research findings of the ongoing Life Span Study of atomic bomb survivors conducted by the Radiation Effects Research Foundation (RERF) in Japan and to the conclusions contained in the 1990 report of the Committee on Biological Effects of Ionizing Radiation (BEIR V) of the U.S. National Research Council, National Academy of Sciences. The Tribunal was greatly assisted in reviewing and understanding those findings and conclusions by Dr. Robert Miller, an internationally-recognized expert in the area of radiation health effects and Scientist Emeritus at the NCI.

In late 1993, following a visit to RERF by a delegation from the Tribunal and a review of the most recent studies of Japanese atomic bomb survivors, two more conditions (numbers 26 and 27 in Attachment B) were added to the Tribunal's list.

Another review of the list was conducted by the Tribunal during 1995-96. Dr. Edward Radford, former Chairman of the National Academy of Sciences Committee on the Biological Effects of Ionizing Radiation (BEIR III), testified extensively about the latest RERF findings, as contained in the Radiation Research Society's 1994 report entitled Cancer Incidence in Atomic Bomb Survivors. That report presented, for the first time, comprehensive data on the incidence of solid cancer and risk estimates for A-bomb survivors in the extended Life Span Study cohort. The data is based on solid cancer diagnoses made between 1958 and 1987.

Based largely on those findings, the Tribunal's list was extended in 1996 to add seven new presumed medical conditions (numbers 28-34 in Attachment B). Based on a 1996 report from RERF entitled Studies of the Mortality of Atomic Bomb Survivors, bone cancer was added to the list in 1998.

Thus the Tribunal's personal injury compensation program now encompasses 35 medical conditions, each one of which has been adopted based on accepted scientific and medical research findings about the effects of radiation on humans or on established precedent in a U.S. program entitling American citizens to compensation for conditions presumed to result from radiation exposure.

As of April 30, 1999, net awards of compensation totaling $67.7 million had been made by the Tribunal to or on behalf of 1,613 individuals who suffered from one or more of those conditions.

Actual Payment of Tribunal Awards

The 177 Agreement provides that awards made by the Tribunal shall be paid on an annual pro rata basis from available funds. When the first awards were made in August and September 1991, an initial payment was made in the amount of 20%. Subsequently, annual pro rata payments were made every October as follows: 5% in 1991, 8% in 1992, 7% in 1993, 10% in 1994, and 5% in 1995.

For each new award made between October 1991 and October 1996, an initial payment was made in the amount of the accumulated percentage received by previous awardees. Thus, awards made from November 1991 to October 1992 were paid at 25%, awards from November 1992 to October 1993 were paid at 33% and so on.

By March 1996, the Tribunal had awarded more compensation than the $45.75 million provided to it under the Section 177 Agreement for payment of awards during the 15-year period of the Compact of Free Association. Accordingly, the Tribunal was forced to reduce the pro rata annual payments in 1996, 1997 and 1998 to 2%, bringing the total cumulative payment to 61% for all awards that had been approved prior to October 1, 1996.

For awards made on or after October 1, 1996, the Tribunal established a new initial payment rate of 25% of the net total of each award. In making that determination, the Tribunal noted that anticipated new compensation awards would make it impossible to continue to make initial payments at the same cumulative rate as has been paid previously. Annual payments were made against this latter group of awards in the amount of 5% in 1997 and 10% in 1998, bringing their cumulative total payout to 40%. Awards made between October 1, 1997, and September 30, 1998, received a 25% initial payment and a 15% annual payment in October 1998 for the same cumulative total payout of 40% to date.

To summarize the actual payment status, the large majority of awards (1,274 out of 1,613) have been paid at the 61% level. Those individuals awarded compensation between October 1, 1996, and September 30, 1998 have been paid 40% of their awards.

Claims for Damage to Property

Also pending before the Tribunal are many claims for damage to property. At both Bikini and Enewetak, several islands were vaporized by nuclear tests. Many other islands in those two atolls and in Rongelap, Rongerik, Ailingnae and Utrik were severely contaminated by radiation during the testing program. Claims for land damage in these atolls are being pursued through separate class actions. Because the above-mentioned atolls were acknowledged to have suffered the most damage and because the claims for that damage have been filed on behalf of all of the people of those atolls, they have been given priority over individual land damage claims by the Tribunal.

A major category of damage in the class action property claims is cleanup and rehabilitation of the atolls and islands involved. In connection with those claims, the Tribunal conducted formal hearings late last year toward establishing a radiation protection standard on which it will rely in considering claims for cleanup and rehabilitation of islands and atolls that remain contaminated as a result of the nuclear testing program. In December, the Tribunal issued a written decision in which it adopted the "policies and criteria" set out by the U.S. Environmental Protection Agency in its August 1997 memorandum "Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination." That document provides that "If a dose assessment is conducted at the site then 15 millirem per year (mrem/yr) effective dose equivalent (EDE) should generally be the maximum dose limit for humans."

That standard is the basis on which extensive evidence has just been presented to the Tribunal in order for it to determine the need for and cost of radiological rehabilitation of Enewetak Atoll. The same standard will also provide the basis on which the Tribunal will hear evidence relating to the need for and cost of rehabilitation for Bikini, Rongelap, Utrik, and any other atolls where such action may be warranted.

To date, no compensation has been awarded for property damage but the first such award will almost certainly be made within the next few months.

Immediate Need

As of April 30, 1999, a total of $67.7 million has been awarded to or on behalf of 1,613 individuals for personal injuries. Under the Section 177 Agreement, however, only $45.75 million will be available to the Tribunal for annual pro rata payment of those awards during the 15-year period of the Compact. That leaves a shortfall of more than $22 million, making it clear that Tribunal awardees will not receive full payment of their awards prior to the end of the Compact period unless additional money is provided.

This shortfall of funds for payment of personal injury awards that have already been made by the Tribunal is one of the main issues that I want to address in my testimony today .

Under the payment scheme implemented by the Tribunal, cumulative payments totaling 61% of each award have been made to about 1,300 people whose awards were made prior to October 1, 1996, and cumulative payments totaling 40% of each award have been made to the approximately 300 individuals whose awards have been made since that date.

The inadequacy of funds for payment of awards is made much worse by the fact that 632 (more than 39%) of the people with personal injury awards are now deceased. The estates of those individuals have been probated at the RMI High Court and the Tribunal continues to issue annual pro rata payments to the estate administrators for distribution to the heirs and beneficiaries. But a problem of increasing magnitude is that more and more administrators, heirs and beneficiaries are passing away. Each time this happens, the

families of the deceased awardees are forced to return to the High Court for appointment of a new administrator or for formal amendment of the court-approved list of beneficiaries and distribution scheme. For each such proceeding, the family must attend a High Court hearing in either Majuro or Ebeye and pay well over $100 in required filing and public notice fees.Estates where the 6-10 children of the decedent were originally named as beneficiaries may now have 30 or more beneficiaries as the grandchildren of the decedent are designated to divide their deceased parent's share of the estate. When an annual payment of 2% of an award is divided among that many people, the resulting amount per person can be less than $10 per year.

The immediate solution from the Tribunal's point of view is to request a lump sum payment from the U.S. so that awards to decedents, and to others who are suffering from compensable medical conditions that are likely to be terminal, can be paid off in full. In order to determine what the necessary lump sum amount will be, an analysis of all awards has been completed. As detailed in Attachment C, the amount currently needed is approximately $22.9 million. I hope that the Committee will provide guidance in how a formal request for this amount can be pursued most effectively and efficiently.

Conclusion -

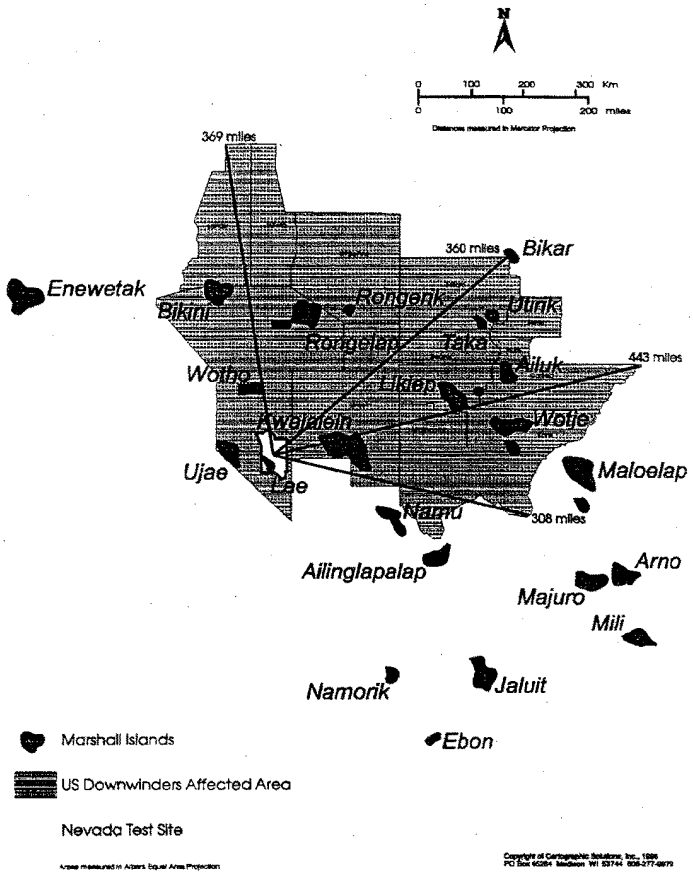
There was much that was proper and appropriate in the 177 Agreement, but time and experience have demonstrated that most of the benefits provided were inadequate to meet the needs that have become clear as more and more knowledge and understanding has emerged of the damages wrought by the testing program.

That knowledge and understanding now makes it possible to begin to see the inadequacy of the funding of the activities and programs specifically provided for in the Agreement.

The people of the Marshall Islands have as much experience living, and dying, with radioactive contamination as any other population in the world. Acknowledging that the 177 Agreement could not realistically and reasonably have foreseen all of the needs that have emerged as a result of the nuclear testing program, and taking appropriate action to remedy some of its oversights and inadequacies, is clearly warranted at this time.

Thank your for your attention.

**ATTACHMENT A**
**COMPARISON OF GEOGRAPHIC AREAS OF PRESUMED EXPOSURE,**
**U.S. DOWNWINDERS' PROGRAM AND REPUBLIC OF THE MARSHALL ISLANDS**



## ATTACHMENT B
### MARSHALL ISLANDS NUCLEAR CLAIMS TRIBUNAL
### SUMMARY OF PRESUMED MEDICAL CONDITIONS REGULATIONS

Pursuant to §23(13) of the Marshall Islands Nuclear Claims Tribunal Act, as amended, the Tribunal has adopted regulations establishing a list of medical conditions which are irrebuttably presumed to be the result of the Nuclear Testing Program. For eligible claimants, the administratively presumed medical conditions and the amounts of compensation that will be paid in pro rata annual payments are as follows:

1. Leukemia (other than chronic lymphocytic leukemia) ..... $125,000
2. Cancer of the thyroid
   - a. if recurrent or requires multiple surgical and/or ablation ..... 75,000
   - b. if non-recurrent or does not require multiple treatment ..... 50,000
3. Cancer of the breast
   - a. if recurrent or requires mastectomy ..... 100,000
   - b. if non-recurrent or requires lumpectomy ..... 75,000
4. Cancer of the pharynx ..... 100,000
5. Cancer of the esophagus ..... 125,000
6. Cancer of the stomach ..... 125,000
7. Cancer of the small intestine ..... 125,000
8. Cancer of the pancreas ..... 125,000
9. Multiple myeloma ..... 125,000
10. Lymphomas (except Hodgkin's disease) ..... 100,000
11. Cancer of the bile ducts ..... 125,000
12. Cancer of the gall bladder ..... 125,000
13. Cancer of the liver (except if cirrhosis or hepatitis B is indicated) ..... 125,000
14. Cancer of the colon ..... 75,000
15. Cancer of the urinary tract, including the urinary bladder, renal pelves, ureter and urethra ..... 75,000
16. Tumors of the salivary gland
    - a. if malignant ..... 50,000
    - b. if benign and requiring surgery ..... 37,500
    - c. if benign and not requiring surgery ..... 12,500
17. Non-malignant thyroid nodular disease (unless limited to occult nodules)
    - a. if requiring total thyroidectomy ..... 50,000
    - b. if requiring partial thyroidectomy ..... 37,500
    - c. if not requiring thyroidectomy ..... 12,500
18. Cancer of the ovary ..... 125,000
19. Unexplained hypothyroidism (unless thyroiditis indicated) ..... 37,500
20. Severe growth retardation due to thyroid damage ..... 100,000
21. Unexplained bone marrow failure ..... 125,000
22. Meningioma ..... 100,000
23. Radiation sickness diagnosed between June 30, 1946 and August 18, 1958 inclusive ..... 12,500
24. Beta burns diagnosed between June 30, 1946 and August 18, 1958 inclusive ..... 12,500
25. Severe mental retardation (provided born between May and September 1954, inclusive and mother was present on Rongelap or Utirik Atolls at any time in March 1954) ..... 100,000
26. Unexplained hyperparathyroidism ..... 12,500
27. Tumors of the parathyroid gland
    - a. if malignant ..... 50,000
    - b. if benign and requiring surgery ..... 37,500
    - c. if benign and not requiring surgery ..... 12,500
28. Bronchial cancer (including of the lung and pulmonary system) ..... 37,500
29. Tumors of the brain, including schwannomas, but not including other benign neural tumors ..... 125,000
30. Cancer of the central nervous system ..... 125,000
31. Cancer of the kidney ..... 75,000
32. Cancer of the rectum ..... 75,000
33. Cancer of the cecum ..... 75,000
34. Non-melanoma skin cancer in individuals who were diagnosed as having suffered beta burns under number 24 above ..... 37,500
35. Cancer of the bone ..... 125,000

To review or obtain copies of the regulations, contact Cathlina deBrum Wakefield, Clerk of the Tribunal, P.O. Box 702, Majuro, MH 96960; telephone (692) 625-3396; facsimile (692) 625-3389; e-mail nctmaj@ntamar.com.

**ATTACHMENT C**
**ANALYSIS OF NUCLEAR CLAIMS TRIBUNAL'S FUNDING REQUEST**

| Compensable Condition | Number of Awardees Presently Living* | Amount Owed | Number of Decedents | Amount Owed |
|---|---|---|---|---|
| Acute Radiation Sickness | n/a | $0 | 32 | $156,000 |
| Benign Salivary Tumor | n/a | 0 | 4 | 48,750 |
| Beta Burns | n/a | 0 | 32 | 158,625 |
| Breast Cancer | 16 | 736,125 | 65 | 2,180,745 |
| Bronchial Cancer | 4 | 100,500 | 144 | 3,395,625 |
| Cancer of the Bile Duct | 0 | 0 | 2 | 99,000 |
| Cancer of the Bone | 0 | 0 | 2 | 178,500 |
| Cancer of the Brain | 1 | 75,000 | 10 | 590,300 |
| Cancer of the Cecum | 0 | 0 | 4 | 150,600 |
| Cancer of the Colon | 1 | 29,250 | 23 | 794,265 |
| Cancer of the Esophagus | 1 | 42,310 | 4 | 177,840 |
| Cancer of the Kidney | 1 | 45,000 | 10 | 372,900 |
| Cancer of the Liver | 0 | 0 | 27 | 1,194,135 |
| Cancer of the Ovary | 13 | 517,110 | 33 | 1,677,885 |
| Cancer of the Pancreas | 1 | 60,600 | 17 | 937,700 |
| Cancer of the Pharynx | 3 | 138,000 | 19 | 628,395 |
| Cancer of the Rectum | 1 | 46,875 | 15 | 540,000 |
| Cancer of the Salivary Gland | n/a | 0 | 4 | 108,500 |
| Cancer of the Small Intestine | 0 | 0 | 2 | 61,875 |
| Cancer of the Urinary Bladder | 1 | 29,250 | 6 | 181,140 |
| Hypothyroidism | n/a | 0 | 4 | 29,250 |
| Leukemia | 7 | 305,250 | 37 | 1,501,205 |
| Lymphoma | 8 | 371,520 | 42 | 1,890,580 |
| Meningioma | 7 | 240,375 | 5 | 158,130 |
| Multiple Myeloma | 0 | 0 | 3 | 131,430 |
| Non-Melanoma Skin Cancer | 0 | 0 | 1 | 22,500 |
| Stomach Cancer | 0 | 0 | 28 | 1,331,980 |
| Thyroid Cancer | n/a | 0 | 25 | 461,937 |
| Thyroid Nodule | n/a | 0 | 141 | 963,000 |
| TOTALS | 65 | $2,737,165 | 741** | 20,122,792 |

* Indicates number of awardees presently living who suffer from a medical condition likely to be terminal

** Indicates the total number of medical conditions for which compensation has been awarded. The total number of decedents is 632 (note that some individuals have received awards for multiple conditions)

Mr. DOOLITTLE. Dr. Mauro, you are recognized for your testimony.

Mr. MAURO. I would like to suggest that Mr. Richardson proceed first. The information that he will be covering sort of precurse the information that I will be covering.

Mr. DOOLITTLE. All right. That will be fine. Mr. Richardson, you are recognized, sir

**STATEMENT OF ALLAN C.B. RICHARDSON, SCIENTIFIC CONSULTANT TO THE PEOPLE OF ENEWETAK**

Mr. RICHARDSON. Thank you, Representative Doolittle and other members of the Committee. Thank you for the opportunity to provide testimony today. My name is Allan Richardson. I am a consultant to the people of Enewetak and Bikini. I have submitted a written statement for the record. I will just summarize that statement here.

By way of introduction, I would like to point out that I spent almost 30 years at EPA establishing standards for radiation before retiring a little over a year ago, as well as many years as the U.S. representative on various matters to the International Atomic Energy Agency and to the International Commission on Radiation Protection.

This morning I would like to address a narrow topic: what standard should apply to the cleanup of the Marshall Islands, a standard that would define what is needed to adequately protect future health of the Marshallese. This question obviously must be answered before one can address what needs to be done and what the cost will be.

I will address three points: The first is What standard applies to similar cleanups in the United States, a question that Congressman Miller asked earlier. Second, should this same standard apply in the Marshall Islands; and then, third, I will touch briefly on what the key provisions of the recommended standard are.

First, to the question of what standard applies in the United States. The Marshall Islands testing was the final element of a massive U.S. weapons development program, as we all know. Almost all of the rest of that program was conducted at sites in the United States that are now under jurisdicion of the DOE. Those sites provide the appropriate model for similar cleanup situations in the United States because they involve the same kinds of materials, manmade radioactive materials.

This nuclear weapons complex in the United States is now undergoing a massive cleanup. Just to give you some idea of the size of that cleanup, 99 percent of all soil contaminated with manmade radiation in the United States is located on sites that are involved in the U.S. nuclear weapons program.

In my written testimony there is a chart that details radioactively contaminated U.S. sites and associated volumes of soil. By comparison, the amount of contaminated soil in the Marshall Islands is much less than 1 percent of that total amount.

The applicable law for the cleanup of the Department of Energy sites is CERCLA, the Comprehensive Environmental Response, Compensation and Liability Act, otherwise known as Superfund. It applies to all of the DOE sites involved here. And as you probably

know, the exercise of the Superfund authority involves a cooperative relationship between the contaminater, the Environmental Protection Agency, and the State in which the site is located.

EPA sets the rules, the States are involved in the selection of the remedy, and in this case the Department of Energy is responsible for the cleanup. There have been established, by regulation, general rules for the level of cleanup that is required.

The relevant rule in this case is that the residual risk to the most exposed individuals that are expected to be on the site in the future should be less than 1 in 10,000 over their lifetimes. That standard was set in 1990. It applies to all kinds of hazardous contaminants, not just to radiation.

In 1997, the agency established a standard specific to radiation, based on that general criterion. That standard is the number that you have heard several times today, 15 millirems per year. Clearly, this is the standard that is applied in the United States to situations like that in the Marshall Islands. It applies to well over 99 percent of all such contamination in the United States.

The second question was: Should the U.S. standard apply in the Marshall Islands? The relevant international authority on radiation matters is the International Atomic Energy Agency. It was established in 1957 at the urging of President Eisenhower, and the United States has strongly supported it ever since.

The IAEA enunciated the applicable principle for this case in 1985, many years ago. What they said—and I will quote them here—is that: "As a basic principle, policies and criteria for radiation protection of populations outside national borders . . . should be at least as stringent as those for the population within the country of release."

The U.S. has consistently followed this position in the Marshall Islands over the years, although sometimes hesitantly and in a changing way, as standards in the U.S. have evolved.

The U.S. also observes this principle in more general ways. An example is the Basel Convention, which forbids the disposal of domestic toxic and hazardous materials in foreign countries unless the standards of the country of origin are met. There is a similar provision for radioactive waste by the International Atomic Energy Agency that we also espouse.

For this case the important point is that if the Marshall Islands were in the United States, the standard that applies to all of the DOE complex, 99 percent of U.S. manmade contamination, would apply.

I think the conclusion, therefore, is inescapable that, under both international and U.S. precedents and practice, the Marshall Islands are entitled to the same level of protection from the radiation contamination caused by U.S. weapons programs that we provide our own citizens.

The Nuclear Claims Tribunal, as Mr. deBrum just mentioned, came to the same conclusion and adopted the U.S. standard as the basis for adjudicating claims on December 31 of 1998.

Finally, a few brief observations about the standards themselves. The risk under the standard is 1 in 3,000. This risk lies at the extreme upper end of the acceptable risk range under Superfund. The risk of 1 in 3,000 is approximately the risk that you would project

for an atoll in the Marshall Islands, because the rough size of the population that you expect to see on a single atoll is about 3,000.

The standard is not without burdens. There is regulatory flexibility in the application of the standard that allows the use of "institutional controls" to reduce environmental damage and costs—if the affected population agrees to this.

Institutional controls are measures that do not remove the contamination, but instead reduce exposure through methods that require continuing intervention by man. A good example for the Marshall Islands is the proposal to use potassium to suppress the uptake of radioactive cesium in foodstuffs.

The benefit of using this measure is that much less soil needs to be removed and much less environmental damage and cost is incurred. The cost of using the measure—the burden—is the burden of maintenance of the control measures for many, many decades and, of course, the risks that accrue if the control measure fails to be maintained.

That concludes my testimony. I would be pleased to answer any questions.

[The prepared statement of Mr. Richardson follows:]

**Statement of Allan C.B. Richardson**
Scientific Consultant to
The People of Enewetak, Republic of the Marshall Islands

on May 11, 1999, before the

**Committee on Resources**
Don Young, Chairman
U.S. House of Representatives

Mr. Chairman and members of the Committee, thank you for the opportunity to testify on the radiological rehabilitation of atolls in the Marshall Islands. I appear this morning at the request of the Embassy of the Republic of the Marshall Islands. Last October I was retained by the People of Enewetak to advise them on radiological standards for cleanup of their atoll: standards that would assure adequate protection of their future health. Recently I have been asked to similarly assist the People of Bikini. I hope that I can be of assistance in these matters, based on my personal experience in the establishment of major national standards and international guidance for protection of workers and members of the public from radiation for almost thirty years - - at the U.S. Environmental Protection Agency (EPA) from its formation in 1970 until my retirement early last year, as an expert to the International Atomic Energy Agency (IAEA) since the early 1980s, and for the International Commission on Radiological Protection (ICRP) during the 1990s. These standards and guidance have ranged from the current United States standards for workers, standards for environmental releases from the nuclear power industry, and standards for cleanup and disposal of uranium mill tailings, to development of International recommendations for response to nuclear accidents, for exemption of radioactive sources from regulation, and for managing releases of radioactive materials outside national boundaries.

On December 21 of last year the Nuclear Claims Tribunal of the Republic of the Marshall Islands adopted standards that define the degree of cleanup required to bring the

radioactively contaminated atolls in the Marshall Islands to an adequate and appropriate level of health protection. My purpose today is to review the rationale for that decision and to describe the standard that was adopted. I will not address the specific measures available to achieve it -- those will be described by others in later testimony. The identification of a cleanup standard has been relatively straight-forward. I will address it in two parts: 1) What is the relevant standard for cleanup of similar contamination in the United States and, 2) Is this standard appropriate for use in the Marshall Islands?

**What standard applies to similar situations in the U.S.?**

The nuclear testing program in the Marshall Islands was the final element in the U.S. program to develop nuclear weapons -- a program that located all of its other elements in the continental United States. The U.S.-based elements involved sites that are now all part of the massive cleanup underway by the U.S. Department of Energy (DOE). These sites contain more than 99% of the soils and other materials contaminated with man-made radioactivity in the United States. Table 1 provides a summary of the projected volumes of contaminated materials involved in the cleanup at these and at other U.S. sites. The volume of contaminated soils at the DOE sites exceeds that at all other U.S. sites by more than a factor of one hundred. (By way of providing a perspective on these volumes relevant to cleanup of the Marshall Islands, at one site that has already been cleaned up and that is of comparable size to Enewetak (Fernald in Ohio), more than twenty times as much contaminated soil was removed as was removed from all the islands of Enewetak during the 1978-80 partial cleanup. Surprisingly, since doing cleanups at a remote location like Enewetak might be expected to be more costly, the costs in current dollars reflected an almost identical ratio.) These DOE sites comprise the vast majority of all cleanup of man-made radioactivity in the U.S. and they therefore provide the model for how comparable situations are being handled in the United States today.

The cleanup of the DOE sites is being carried out under the oversight of EPA and the host States through the Comprehensive Environmental Restoration, Compensation and Liability Act (CERCLA), commonly known as "Superfund." General criteria for the

level of health protection to be achieved in Superfund cleanups were established by regulation in March 1990 (they are codified at 40 CFR in Section 300.430(e)(2)(i)). Under these general criteria all contaminants are treated consistently. This means that radioactive contaminants, which are carcinogens, are not treated as special cases with acceptable risk levels that are different from those required for other carcinogenic materials. The criterion for cleanup of carcinogens is that the lifetime risk to an individual should not exceed $10^{-4}$, or about one in ten thousand. In August 1997, EPA issued more detailed guidance for implementing this criterion for radioactive contaminants. Using the dose units common to radiation protection, the criterion was specified as 15 millirems effective dose equivalent per year. This dose level corresponds to a lifetime risk of three in ten thousand, the upper extreme of risk permitted under the regulation.

**Is this standard appropriate for use in the Marshal Islands?**

The question may be simply restated as whether or not to apply the biblical maxim that one should behave toward others as one would have others behave toward oneself. (Matthew 7:12). The answer - - for radioactive contamination - - has been expressed in a straight-forward manner in guidance issued by the International Atomic Energy Agency (IAEA) in 1985 as Safety Series No. 67, entitled **Assigning a Value to Transboundary Radiation Exposure**. In the Summary and Recommendations, the IAEA states:

> *"As a basic principle, policies and criteria for radiation protection of populations outside national borders from releases of radioactive substances should be at least as stringent as those for the population within the country of release."*

The United States was instrumental in founding the IAEA - - it was created in 1957 after a speech by President Dwight D. Eisenhower advocating the establishment of such an agency to promote the peaceful development and safety of nuclear power. Since 1957 the United States has consistently promoted worldwide acceptance of IAEA safeguards and safety standards, and these pronouncements of the IAEA are generally accepted rules and

standards in this field that are obligatory as customary international law. In addition, the United States has endorsed the above principle in other areas, such as the Basel Convention, which forbids the disposal of toxic and hazardous materials in foreign countries unless they meet the standards applicable in the country of origin, and an analogous IAEA statement that applies specifically to radioactive wastes. In short, it would be inconsistent with the U.S. initiative that created the IAEA and our continuous strong support of the IAEA if the United States did not satisfy this IAEA principle when considering our decisions for the Marshall Islands.

Finally, in spite of pressure to do otherwise, the record demonstrates that in past decisions dealing with permission for habitation, as well as the previous incomplete attempts to clean up some of the atolls in the Marshall Islands, the United States has consistently elected to conform to existing U.S. radiation standards and guidance. There is no compelling reason to depart from that precedent now. The Marshallese are entitled to the same level of protection from the radioactive contamination created by the U.S. nuclear weapons program that we provide to U.S. citizens.

The Nuclear Claims Tribunal of the Republic of the Marshall Islands, in a ruling on December 21, 1998, adopted the U.S. standard of 15 millirems per year, based on its concurrence with the above rationale.

**What are the risks from residual contamination under the standard?**

The standard requires cleanup (or other measures to reduce exposure) that limits the lifetime risk to the reasonably maximum exposed individual to one in three thousand. In simple terms, this means that in a population of 3000 such individuals the most likely result is that one person would be expected to contract cancer (with a two out of three chance of death) over the normal lifetime of that population. In actuality, the risks would be lower, because most of the population is expected to be exposed at less than the reasonably maximum exposure rate. Subsequent populations would also be at risk, but at even lower levels, due to the natural decay of radioactivity. To put this in perspective,

the anticipated future populations of atolls like Enewetak and Bikini are estimated to be of the same order of size as the above example, based on the ability of the atolls to support the necessary level of agriculture.

There remains some uncertainty in these risk estimates, above and beyond the scientific uncertainty inherent in risk estimation, due to provisions under EPA's regulations for Superfund that allow for the use of so-called "institutional controls." This is both an important strength and a potential weakness of the standard. Institutional controls are measures that reduce exposure using means that do not remove the contamination, but instead depend on continuing intervention by man to control exposure. An example unique to cleanup of the Marshall Islands is the use of potassium on food crops to suppress uptake of the principle contaminant, radioactive cesium. This control measure has the important advantage that it not only greatly reduces the amount of contaminated soil that must be removed and thereby avoids unnecessary and potentially serious environmental damage, but it also significantly reduces the cost of remediation. The potential weakness is that if this control measure is not carefully maintained until the radioactivity has decayed to safe levels (up to a century in some cases), the risks can be much higher than those permitted by the standard. On balance, due to the fragile ecosystem of the atolls, the net benefit of avoiding unnecessary removal of precious soil appears to greatly outweigh the dangers of failure to maintain institutional control. However, this is a judgment properly made by the inhabitants, who must maintain this control, and who would have to live with the consequences of more drastic alternative forms of remediation.

I hope that these remarks have provided some insight into the basis for the selection of a standard for cleanup of the remaining contamination in the Marshall Islands. Thank you for providing the opportunity to present these comments, and for your attention. I will be pleased to answer any questions that you may have.

**Table 1. United States Radiation Contaminated Sites [1]**

| | Type of radioactive contamination* | Soil volume (cubic meters) |
|---|---|---|
| **Federal** | | |
| DOE sites | | |
| Major sites | | |
| *Fernald* | AEA | 2,100,000 |
| *Hanford* | AEA | 23,600,000 |
| *Idaho NEL* | AEA | 720,000 |
| *Nevada Test Site* | AEA | 16,000,000 |
| *Oak Ridge* | AEA | 133,000 |
| *Rocky Flats* | AEA | 460,000 |
| *Savannah River* | AEA | 19,000,000 |
| *Los Alamos* | AEA | 9,800,000 |
| *Weldon Springs* | mostly NORM | 480,000 |
| Other sites (43) | mostly AEA | 480,000 |
| FUSRAP sites (30) | NORM/AEA | 1,790,000 |
| DOD sites | | |
| *Aberdeen & Bomarc* | AEA | 21,000 |
| All others (145) | AEA/NORM | ? |
| Other Federal sites (2) | NORM | ? |
| **Non-Federal** | | |
| NRC sites | | |
| Nuclear power (199) | AEA | 32,000 |
| Byproduct licensees (1994) | AEA | 60,000 |
| Rare earth mill sites (17) | NORM | 120,000 |
| Others under Superfund | | |
| Radium sites, landfills (21) | mostly NORM | ? |

* "AEA" means man-made radioactivity; "NORM" means any naturally-occurring material.

[1] Sources: *DOE's CERCLA annual report to Congress for FY 1996, DOE/EM-0330 (1997); Linking Legacies, DOE/EM-0319 (1997): Radiological criteria for license termination, U.S.NRC 62 F.R. 39058-92, July 21, 1997.*

Mr. DOOLITTLE. Thank you. Dr. Mauro, you are recognized.

**STATEMENT OF DR. JOHN MAURO, SANFORD COHEN AND ASSOCIATES**

Dr. MAURO. Thank you for inviting me here today and thank you to the people of Enewetak for asking me to come. I work for Sanford Cohen and Associates. This is a small company in McLean, Virginia, that specializes in risk assessment.

My background is specifically in the area of health, physics, and radioecology. This is the study of radioactivity in the environment and its effects on people. I have been performing analyses of the type that I will be summarizing here for about the past 25 years at hundreds of different sites throughout the United States.

This past September the people of Enewetak retained SC&A to peform an independent evaluation of the radiological conditions on Enewetak atoll, specifically, and to assess what needs to be done to remediate the atoll so that it would comply with the clearance criteria, or the acceptance criteria, for cleanup that was summarized by Mr. Richardson.

We started our investigations in October, and we completed them in April. In April we appeared before the tribunal presenting testimony on our findings. The 12-page summary that I provided you with there summarizes this, but I also have a full copy of our report that I would like to leave with the Committee. It details our findings.

What we basically did was collect all of the data that the Department of Energy has collected since the 1970s, literally tens of thousands of measurements. We did not perform any measurements of our own. We used that data to perform mathematical modeling of if the people of Enewetak were to return to the northern islands—by the way, some of the questions that were raised earlier, as I proceed I would like to respond to some of those questions because I think they are important.

The people of Enewetak are currently living on the southern islands, Enewetak island. But the northern islands such as Enjebi, homeland for many of the Enewetak people, are currently not being occupied because of radiologic concerns.

What we did—what I did as part of a team of people at SC&A was to gather all of the data and evaluate the radiation doses that might occur to people who would relocate to the northern islands tomorrow and assess what kind of radiation doses they would receive and what needs to be done to correct the problem.

What we found out is that the radiation doses, if the people of Enewetak should return to Enjebi, for example, one of the many islands north, in the year 2000, the doses would be 10 to 100 to 500 times higher than the current radiation protection standards we are using in the United States, an unacceptable situation.

We then proceeded to ask what could be done about that. We evaluated a broad range of alternative remediation strategies. We actually costed out 30 different approaches to remediate the problem. And in doing so, we used five criteria to sort of score or evaluate the merits of all of the alternatives to fix the problem.

First, whatever the remedy, it should allow the people of Enewetak to return to their homes in the northern islands as soon

as possible. If you were to wait for the radioactivity to decay, it turns out the important radionuclide, the cesium 137 with a 30 year half life, it would take over 100 years to decay down to levels that were acceptable.

Second, the cleanup has to be protective. That means achieve the cleanup criteria of 15 millirem per year. Third and very important, whatever strategies that are adopted it minimizes the ecological damage and incorporates measures that restores the ecosystem to a self-sustaining condition.

Fourth, cost effective; and finally, permanent, that is, whatever solution or remedy strategy is selected, it should be a permanent solution. Based on our investigations, we identified a strategy to recommend, and it consists of five elements.

First, scrape away the soil that is contaminated at the elevated, the higher levels. That represents an area of about 550 acres and 223,000 cubic meters of soil. We considered a lot of different ways of getting rid of that soil, disposing of it as low-level waste, shipping it to the United States and disposing of it in one of the low-level waste facilities. Extremely expensive.

We feel that the most prudent and cost-effective use of that soil is to use it as a causeway, to construct a causeway between Enewetak island and its neighboring Medren island. The reason we believe this to be acceptable is the problem with cesium in the soil on the northern islands is that if plants are grown, coconuts, pandanus and other locally grown foods, it accumulates in the food.

So it is the food pathway that is the problem. If it is used as a fill material for a causeway, that problem goes away. In about 100 years, the radioactivity itself will go away. We feel that is the most cost-effective and productive use of that material.

By the way, that aspect of our analysis is where we differ significantly from DOE. We think a lot more scraping needs to be done to achieve the cleanup criteria. The second thing where we do agree with DOE is that, yes, on areas where the contamination is at a lower level and after you have scraped away the higher levels, the use of potassium to suppress the uptake of cesium in the coconut and pandanus, et cetera, will be very effective in controlling exposures; but under a carefully monitored program, this is a type of institutional control that Mr. Richardson mentioned, the areas that are scraped will need to be rehabilitated and the agriculture properties will have to be restored when you scrape away soil.

There is another element that makes up the program. There is also a special unique problem in one of the northern islands called the Runit island that has an area called the Fig/Quince Area where there are some elevated levels of plutonium.

This is the only area that our review of the data reveals that has a problem in addition to cesium and that requires a special cleanup. That is part of our proposed strategy. Based on that recommendation, we have estimated the cost. Including a 15 percent contingency, the cost of that program, the combination program, would be $115 million. That concludes my statement.

[The prepared statement of Mr. Mauro follows:]

STATEMENT BY JOHN MAURO BEFORE THE COMMITTEE ON RESOURCES REGARDING THE STATUS OF NUCLEAR CLAIMS, RELOCATION, AND RESETTLEMENT EFFORTS IN THE MARSHALL ISLANDS

This statement was prepared by Dr. John Mauro as an employee of Sanford Cohen & Associates (SC&A), Inc. of McLean, Virginia. On October 16, 1998, SC&A was retained by the People of Enewetak by the Enewetak/Ujelang Local Government Council ("Council") of the Republic of the Marshall Islands to assist the Council with respect to radiological issues concerning the remediation, restoration, and resettlement of Enewetak Atoll. Specifically, SC&A performed the following investigations:

1. An evaluation of the potential radiation doses and radiological health risks to populations on Enewetak Atoll due to radioactive contamination of the environment from weapons-testing. The results of the evaluations were compared to the radiation protection criteria used in the U.S. for the cleanup of sites contaminated with radioactive materials, and adopted by the Nuclear Claims Tribunal for use by the Republic of the Marshall Islands; and

2. An evaluation of the costs associated with the remediation of the Islands to the U.S. cleanup criteria using several alternative remediation strategies. The evaluation included a recommended remediation strategy and its associated costs.

My statement today addresses these two topics.

BACKGROUND

SC&A began work on behalf of the Council in September 1998 following a meeting at the Embassy of the Republic of the Marshall Islands (RMI). In attendance at that meeting were Senator Ismael John, Mayor Neptali Peter, Franco Matearikí, Davor Pevec, Allan Richardson, and myself. During that meeting, we discussed a broad range of issues, including previous work performed by the Department of Energy, the current radiation protection and cleanup criteria being employed in the RMI and in the U.S., the remediation alternatives currently under consideration for Enewetak Atoll, especially the application of potassium chloride (KCl), and a number of other topics pertaining to the history, cleanup, and resettlement of Enewetak Atoll. Following that meeting, SC&A prepared a work plan for providing technical and regulatory support related to the radiological issues associated with resettlement. The plan was subsequently approved by the Council.

Our work consisted of two parallel efforts. The first consisted of support to Allan Richardson and Davor Pevec on technical matters related to the choice of cleanup criteria applicable and appropriate to the Marshall Islands. The outcome of these activities was a ruling by the Nuclear Claims Tribunal (NCT) that adopted the U.S. EPA cleanup criteria applicable to the vast majority of radioactive contamination in the United States, and includes the dose criterion of 15 mrem/yr EDE to the individuals that have the potential to receive the reasonable maximum exposure (RME). The second consisted of a series of investigations into the potential radiation doses and

health risks to resettled populations on Enewetak Atoll and the costs and effectiveness of a full range of alternative remediation strategies designed to reduce these exposures and potential health risks to acceptable levels.

The results of SC&A's investigations pertaining to radiation doses, risks, and remediation strategies were provided to the Council in March 1999 in a document entitled, "Part 1 - Statement Before the Nuclear Claims Tribunal Regarding the Potential Radiation Doses and Health Risks to a Resettled Population of Enewetak Atoll and an Evaluation of the Costs and Effectiveness of Alternative Strategies for Reducing the Doses and Risks," March 23, 1999. A copy of the Statement has been provided to the Committee under separate cover. I served as the Project Manager and Principal Investigator for the preparation of the Statement to the Tribunal and authored those sections dealing with radiation doses and risks. Dr. Hans Behling, also with SC&A, authored those portions of the Statement dealing with alternative remediation strategies and their costs. During the week of April 12, 1999, Dr. Hans Behling and I provided testimony at a hearing of the Nuclear Claims Tribunal addressing the information contained in the Statement.

Our investigations consisted of four parts: (1) characterization of the radiological conditions on Enewetak Atoll, (2) evaluation of the radiological doses and health risks associated with resettlement of the atoll, assuming no further remediation, and comparing these doses and risks to cleanup criteria adopted by the NCT, (3) evaluation of collective health impacts under various remedial alternatives, and (4) evaluation of alternative remediation strategies and their costs for reducing exposures to the cleanup criteria.

Our approach to the project was to use existing data and reports characterizing the radiological conditions of the islands, the dose and risk assessment methodologies recommended by the EPA and used in the U.S. for the cleanup of Federal facilities, and both published and unpublished information regarding the types and costs of alternative remediation strategies.

Our overall objective was to identify remediation strategies that are:

1. protective of public health and the environment,
2. compatible with efforts to establish a self-sustainable ecosystem by minimizing ecological damage, and
3. cost-effective.

## STATEMENT REGARDING RADIATION DOSES AND HEALTH RISKS

### Data Sources

In performing our investigations, SC&A did not collect environmental samples or perform radiochemical analyses of environmental samples. Such analyses were neither possible, nor necessary, given the scope and schedule of the project and the significant quantity of radiological data and reports that have been compiled in the past by several U.S. government agencies, under the direction of Dr. William Robison, and by the Marshall Islands Nationwide Radiological Survey performed under the direction of Dr. Steven L. Simon and James C. Graham. Instead, we

collected and reviewed the available data and reports and developed our own understanding of the radiological conditions of the atoll.

Objectives

Using these data, we pursued three objectives with respect to dose/risk assessment:

- replicate the individual radiation dose estimates obtained by Lawrence Livermore Laboratory (LLL),
- derive average and high-end individual dose rates in accordance with U.S. EPA methodologies and assumptions, and
- derive the potential time-integrated collective health impacts to a resettled population on Enewetak Atoll.

Replication of the LLL Analyses

We decided that it would be prudent to attempt to replicate the radiation dose assessments performed by Dr. William Robison of Lawrence Livermore Laboratory before we performed our own calculations. Our review of the literature revealed that Dr. Robison has been investigating the radiological conditions of the Marshall Islands, including Enewetak Atoll, for many years, and has performed several detailed doses assessments of Enewetak Atoll. In a dose assessment performed for the island of Enjebi of Enewetak Atoll[1], Dr. Robison estimated that the peak annual radiation dose to a typical member of a population that might resettle Enjebi in the future would be about 169 mrem/yr effective dose equivalent (EDE), and that most of this dose would be due to Cs-137 in locally grown foods. Using the same modeling assumptions, we derived a dose of 145 mrem/yr EDE. We believe that the primary reason for the differences in the analyses (which we consider relatively small) is that the Robison analysis derived dose conversion factors using the methods described at the time by the International Commission on Radiation Protection (ICRP), while we used the dose conversion factors recommended by the U.S. EPA, which are an update of the ICRP dose conversion factors. Based on this analysis, we believe that we understand the methods, data, and assumptions used by Robison. We considered this exercise useful because it established a point of departure for the analyses that followed.

Derivation of High-End Doses and Risks

The next step in our evaluations consisted of reassessing the doses using assumptions that are more compatible with the EPA approach to the assessment of radiation doses and risks for the protection of members of the general public due to radioactivity in the environment. The EPA has developed a comprehensive set of standards and implementation protocols, under several environmental statutes, that are designed to protect members of the public from hazardous

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1 Robison, W.L., C.L. Conrado, and W.A. Phillips, *Enjebi Island Dose Assessment*, Lawrence Livermore National Laboratory, UCRL-53805, July 1987.

chemicals and radioactive materials in the environment. The statute most applicable to the issues of concern here is the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also referred to as Superfund. The main objective of Superfund is to assure cleanup of sites contaminated with hazardous material to acceptable levels and the return of the property to a condition suitable for unrestricted use.

As indicated above, the dose assessment presented by Robison is concerned primarily with estimating doses to the average member of the Enjebi population in the year in which the peak dose is projected to occur. Though the EPA makes use of average doses for some purposes, when establishing requirements for cleanup, it places primary reliance on the doses and risks associated with the reasonable maximum exposure of individuals. EPA 1989[2] states that:

> "... *actions at Superfund sites should be based on an estimate of the reasonable maximum exposure (RME) expected to occur under both current and future land use conditions. The reasonable maximum exposure is defined here as the highest exposure that is reasonably expected to occur at a site... The intent of the RME is to estimate a conservative exposure case (i.e., well above the average) that is still within the range of possible exposures."*

Additional guidance provided in EPA 1992[3] states the following:

> *"Information about individual exposure and risk is important to communicating the results of a risk assessment. Individual risk descriptors are intended to address questions dealing with risks borne by individuals within a population. These questions can take the form of:*
>
> - *Who are the people at the highest risk?*
> - *What risk levels are they subjected to?*
> - *What are they doing, where do they live, etc., that might be putting them at higher risk?*
> - *What is the average risk for individuals in the population?*
>
> *The high-end of the risk distribution is, conceptually, above the 90th percentile of the actual (either measured or estimated) distribution. The conceptual range is not meant to precisely define the limits of this descriptor, but should be used by the assessor as a target range for characterizing "high-end risk."*

Given the above general EPA guidelines, it can be concluded that, although the dose assessment provided by Robison is useful for characterizing the doses to an average member of the

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2 EPA 1989, U.S. Environmental Protection Agency, *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A) Interim Final*, EPA/540/1-89/002, December 1989 (page 6-4).

3 EPA 1992, U.S. Environmental Protection Agency, *Guidance on Risk Characterization for Risk Managers and Risk Assessors*, Memo from F. Henry Habicht II, Deputy Administrator to Assistant Administrators and Regional Administrators, February 26, 1992.

population, it does not fully address the high-end doses and potential health risks. In our Statement to the Tribunal, we presented an assessment of the potential high-end doses and health risks associated with a range of different life styles and dietary patterns, assuming that the people of Enewetak Atoll resettle the islands with no further remediation of the residual contamination. We refer to this type of an analysis as a "baseline dose and risk assessment." The baseline dose and risk assessment is used to determine if, and the degree to which, additional remediation and/or institutional controls are needed prior to or during resettlement of individual islands in order to ensure compliance with the designated cleanup criterion of 15 mrem/yr EDE to the RME individual.

Clearly, there is room for interpretation of what, in fact, constitutes a reasonable high-end estimate of doses and risks to future residents of the currently unoccupied islands of Enewetak Atoll. Two independent sets of modeling assumptions are required in order to determine the high-end doses and health risks attributable to the RME individual:

(1) the diet and living habits of the RME individual (which we refer to as the "exposure" scenarios), and

(2) the radionuclide concentrations in the environment and in the food items at the high-end locations on each of the islands (which we referred to as the "source" scenarios).

Based on our review of different diets reported in the 1987 Robison report and summarized in a report by the National Academy of Sciences[4], and consultation with Dr. Laurence Carucci and Ms. Mary Maifeld[5], we elected to evaluate the doses for a range of diets. For the average individual, we elected to use the diet described in the Robison 1987 report as the "local plus imported diet," which consists of 3003 Kcal/d, of which only 512 Kcal/d is local. For the high-end individual, we elected to use two different local-only diets described in NAS 1994; one consisting of a low caloric diet of 1254 Kcal/day and the other consisting of a high caloric diet consisting of 3208 Kcal/day of entirely locally harvested foods. We assumed that the latter diet would not begin until the year 2010, while the others could begin as early as the year 2000.

Inspection of the data characterizing the radionuclide concentrations in soil on each of the islands of Enewetak Atoll revealed that the radionuclide concentrations vary considerably from one location on an island to another. As a result, the doses to an individual household could vary considerably depending on household location. Using several statistical and geographical analytical methods, we determined that the doses to a household located at a high-end location on a given island could be about three times greater than for households located at average locations on that island.

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4 NAS 1994, National Research Council (NRC), 1994, *Radiological Assessments for Resettlement of Rongelap in the Republic of the Marshall Islands*, National Academy Press, Washington, D.C.

5 Dr. Carucci is an anthropologist who spent many years living with the people of Enewetak, and Ms. Maifeld is a Registered Dietician, who has studied the dietary patterns of the people of Enewetak.

The consequences of using high-end assumptions regarding diet and household location has a profound effect on the results of the analysis. As compared to an analysis of the average doses, the high-end doses are up to a factor of about six-fold higher as a result of dietary assumptions, and another factor of three-fold higher as a result of assumptions regarding the radionuclide concentrations at high-end locations. The overall effect is that the high-end doses can be about 18-fold higher than the average doses. Table 1 presents the results of the analysis of the baseline dose assessment for both the average and high-end individuals for the various islands of Enewetak Atoll. The islands in **bold** will require some form of remediation in order to meet the 15 mrem/yr EDE cleanup criterion.

Table 1. Average and high-end doses on islands of Enewetak Atoll

| Island | **Average Dose** (year 2000 using the Robison imported plus local diet and average location)[a] | **High-End Dose** (year 2000, high-end location, Robison 1987 local-only diet (1254 Kcal/d)[b] | **High-End Dose** (year 2010, 3208 Kcal/d, local-only diet (3208 Kcal/d)[c] |
|---|---|---|---|
| | | | |
| **Enjebi*** | **96** | **528** | **1355** |
| **Aej** | **42** | **246** | **632** |
| **Lujor** | **48** | **179** | **460** |
| **Aomen** | **24** | **94** | **242** |
| **Bijire** | **24** | **96** | **247** |
| **Lojwa** | **16** | **60** | **154** |
| **Alembel** | **32** | **102** | **262** |
| Auanij | 3 | 10 | 26 |
| Japtan | 3 | 12 | 31 |
| Medren | 2 | 8 | 21 |
| Enewetak | 2 | 7 | 18 |
| **Runit** | **8** | **43** | **111** |
| **Billae** | **11** | **57** | **146** |
| **Eile** | **107** | **548** | **1408** |
| **Bokenlab** | **31** | **173** | **445** |
| **Kidrinenen** | **34** | **194** | **499** |
| **Mijikadrek** | **23** | **127** | **326** |
| **Boken** | **22** | **113** | **290** |
| **Bokinwotme** | **19** | **97** | **249** |
| **Louj** | **30** | **152** | **391** |
| **Bokoluo** | **460** | **2220** | **5705** |
| **Bokombako** | **219** | **1170** | **3007** |
| **Kirunu** | **104** | **584** | **1501** |
| **Biken** | **9** | **49** | **126** |
| **Ikuren** | **3** | **14** | **36** |
| Kidrenen | 1 | 6 | 15 |
| Ribewon | 0 | 1 | 2 |
| Inedral | 0 | 2 | 4 |
| Van | 1 | 5 | 12 |
| **Mut** | **4** | **19** | **49** |

* Islands in bold require remediation

a. Includes Cs-137 in ubiquitous background, which contributes up to about 1 mrem/yr.

b. Includes Cs-137 in ubiquitous background, which contributes up to about 2 mrem/yr.

c. Includes Cs-137 in ubiquitous background, which contributes up to about 5 mrem/yr.

Our evaluations reveal that, should the population of Enewetak Atoll resettle the northern islands without any additional remediation of the contaminated soil or the implementation of institutional controls, radiation doses to large segments of the population could be several hundred mrem/yr effective dose equivalent (EDE), and, at some locations, exposures could exceed several thousand mrem/yr EDE. The potential lifetime risk of cancer due to these exposures could be as high as six chances in one hundred for individuals who reside at the more highly contaminated locations and obtain most of their foods from the atoll. These radiation exposures far exceed the EPA radionuclide cleanup criterion of 15 mrem/yr EDE to individuals that are anticipated to receive high-end exposures. In addition, the projected lifetime health risks far exceed the EPA risk criterion of no greater than one in ten thousand.

Collective Health Impacts

In addition to assessing the radiation doses and health risks to individuals, we also evaluated the number of serious health effects that could be experienced by resettled populations of Enewetak Atoll in the future due to the levels of radioactive contamination currently in the environment (i.e., the baseline impacts) and following selected remediation alternatives designed to reduce the exposures. We use the term "health detriment" for this quantity.

The health detriment, as defined in our analyses, is the time-integrated, collective health impacts that may be experienced by a resettled population due to residual radioactivity in the environment. The term "collective" is used because the analysis provides an estimate of the total number of serious health effects (primarily cancer) that may occur in the exposed population. The term "collective" distinguishes this analysis from analyses that are concerned with the additional risk to an individual over his or her lifetime (which is addressed above). The term "baseline" is used to refer to the potential impacts on the population under the current radiological conditions of the islands. A baseline analysis distinguishes pre-remediation impacts from the potential impacts following remediation of the contamination or the application of other controls designed to reduce exposures.

Since some radionuclides will be present in the environment for a relatively short period of time, while others will be present for many thousands of years, it is instructive to evaluate the collective health detriment over different time periods. In this analysis, the time periods chosen were 10, 100, 1000, and 10,000 years. The term "integrated" is the mathematical term used for "sum" when performing these types of calculations.

The approach used to derive the baseline collective health detriment consisted of deriving the average radiation exposure to the average individual on each island in the first year of each time period of interest, multiplying that value by the number of people on the island during that time period, and then integrating the exposure over the time period. This results in the time-integrated collective exposure for each time period. This parameter is then converted to health risk using EPA risk coefficients.

The results indicate that, assuming resettlement in the year 2000, and if no additional cleanup, remedial measures, or institutional controls were implemented, the projected radiological health detriment on the population due to the current levels of radionuclide contamination would be about 7 serious health effects over the first 100 year period (year 2000 to 2100) and about 9 serious health effects over a 1000 year time period (year 2000 to 3000).

An assessment of the collective health detriment is useful because it provides an estimate of the potential health impacts that may be experienced by a resettled population and future generations prior to and following alternative remediation strategies. It is also helpful in the development of compensation schemes associated with the projected health impacts. Specifically, the EPA has proposed that investments in remediation of a site can be monetized at a rate of $2 million to $15 million, with a best estimate of $5.8 million per statistical serious health effect averted by a given remediation alternative.[6] This is the range of dollar values EPA proposes to assign to a statistical life in support of the development of environmental standards. Therefore, on this basis, it could be argued that society should be willing to invest between $18 million to $135 million, with a best estimate of $52 million, to avert the projected serious adverse health impacts associated with residual radioactivity in the Enewetak Atoll. It should be noted that such assessments are based on cost/benefit arguments and do not take into account individual equity considerations, such as the one in ten thousand risk criterion that forms the basis of the EPA cleanup standard.

Relevance of Findings

The dose and risk assessments performed by SC&A are in many ways similar to the analyses performed by Lawrence Livermore Laboratory (LLL). However, our analyses differ from those of LLL with respect to several important issues, including:

1. Our analyses explicitly address the high-end individuals, which result in doses that are over 10 times higher than the doses derived by LLL for the average individual;

2. Our analyses address both health risks to individuals and the collective health burden on the exposed population. Analyses performed by LLL did not explicitly address these issues;

3. SC&A evaluated the results of the dose and risk assessment in terms of compliance with EPA's 15 mrem/yr EDE cleanup criterion[7] and the lifetime risk criterion of

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6 See *Guidelines for Preparing Economic Analyses*. This document is currently an EPA review draft that is undergoing review by the EPA Science Advisory Board and the chapters on valuation may undergo revision.

7 See *Establishment of Cleanup levels for CERCLA Sites with Radioactive Contamination*, OSWER No. 9200.4-18, August 22, 1997.

one in ten thousand[8] for high-end individuals. These criteria differ markedly from the cleanup criterion of 170 mrem/yr for the average individual cited by LLL. The results of our analyses revealed that, if the Marshall Islands were a state in the U.S., resettlement of the northern islands of Enewetak Atoll would not be permitted under EPA criteria without extensive remediation and/or institutional controls.

4. The significance of these results are that the remediation methods required to achieve compliance with the EPA criteria must be much more aggressive than those identified by LLL for achieving compliance with the LLL cited criteria. Specifically, our results reveal that the application of potassium to soil[9] cannot, by itself, reduce Cs-137 in food crops to the level required to achieve compliance with the more stringent EPA cleanup criterion of 15 mrem/yr EDE to the RME individual that was adopted by the Nuclear Claims Tribunal.

5. The results of the analysis of the collective health detriment reveal that the residual levels of radioactive material in the environment have the potential to cause about nine serious health effects over the next 1000 years if Enewetak were resettled with no further remediation or the implementation of institutional controls. Using EPA's proposed cost/benefit criterion, avoidance of this potential detriment at a cost of up to $135 million would be considered to be cost/effective.

EVALUATION OF ALTERNATIVE CLEANUP STRATEGIES

In light of these findings, we conclude that substantial remediation is required for most of the northern islands of Enewetak Atoll. Estimates of costs were prepared for three remediation alternatives designated as Case #1, Case #2, and Case #3. Each of these remediation alternatives is designed to meet the 15 mrem per year dose limit. In order to develop the cost estimates for each alternative remediation strategy, we drew heavily from previous cost analyses performed by the Bikini Atoll Rehabilitation Committee (BARC).

Case #1 consists of the removal of all soils with Cs-137 concentration levels in excess of 0.37 pCi/g, which corresponds to 15 mrem/yr EDE above background to the RME individual. The volume of soil requiring removal is estimated to be about 1.9 million cubic meters. Case #1 provides maximal assurance that future exposures would not exceed the prescribed dose limit of 15 mrem per year EDE above background, but would have the most severe ecological consequences.

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[8] See 40 CFR 300, National Contingency Plan

[9] LLL recommended applying potassium chloride to soil as a means to suppress the uptake of Cs-137 by food crops on the islands.

An ecologically less harmful remediation strategy is defined by Case #2. Soil-removal quantities under this approach are reduced to about 468,000 cubic meters, or about one-fourth the volume defined for Case #1. This large reduction in volume is achieved by taking credit for the reduction in dose due to (1) the dilution effect of clean backfill within the root zone of food crops and (2) the associated shielding that reduces external exposure.

Case # 3 uses a combined approach involving both soil removal and soil treatment with potassium. For Case # 3, soil removal is reduced to an estimated volume of 223,000 cubic meters. This case achieves the least environmental disruption of the three remediation strategies.

The primary cost elements associated with each of these three alternative remediation strategies include radiological survey costs, soil removal and/or treatment, disposal of contaminated soil as low-level radioactive waste, and the long-term rehabilitation/restoration of soil.

At a glance, these remediation tasks give the appearance of being commonplace. However, their execution is complicated and made difficult by geophysical factors and the remoteness of Enewetak Atoll that currently includes uninhabited islands. For most of the islands that are earmarked for cleanup and resettlement, there is either no or only a limited existing infrastructure required to support remediation (e.g., piers for loading/unloading heavy equipment, materials, personnel, etc.; intra-island roads; electricity, potable water, housing, sanitation, etc.; field laboratory and other radiological support facilities; a trained and qualified remediation local workforce). Not surprisingly, it is these aspects that are key factors for defining costs.

In deriving cost estimates, we drew heavily from data contained in reports published by the AEC[10], DOE[11], and DNA[12] regarding similar surveillance and cleanup efforts conducted at Enewetak Atoll between 1972 and 1980. Equally important were data involving projected costs contained in a series of reports issued by the Bikini Atoll Rehabilitation Committee (BARC)[13]

The cost analysis for each alternative addresses five soil disposal options and two soil/agricultural rehabilitation options. Thus, for each of the three remediation alternatives, we evaluated 10 options, for a total of 30 different remediation combinations. In addition, all cases include the

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10 U.S. Atomic Energy Commission (AEC), 1973, *Enewetak Radiological Survey*, NVO-140, Nevada Operations Office, Las Vegas, NV.

11 U.S. Department of Energy (DOE), 1982, *Enewetak Radiological Support Project, Final Report*, Friesen, B. Editor, Report NVO-213, Nevada Operations Office, Las Vegas, NV.

12 Defense Nuclear Agency (DNA), 1981, *The Radiological Cleanup of Enewetak Atoll*, Washington, D.C.

13 Bikini Atoll Rehabilitation Committee (BARC), Report No. 1, *Resettlement of Bikini Atoll: Feasibility and Estimated Cost of Meeting the Federal Radiation Protection Standards*, Submitted to the U.S. Congress House and Senate Committees on Interior Appropriations, pursuant to Public Law 97-257; 15 November 1984.

costs for radiological controls around the Cactus Dome on Runit and the costs for the cleanup of plutonium contamination in the Fig/Quince area of Runit.[14] Figure 1 summarizes the results of these analyses.

The costs range from a low value of $70.9 million for Case # 3 using lagoon dumping as the soil disposal method and the agricultural soil rehabilitation option, to a high value of $973.9 million for Case #1 using soil disposal in a crater with dome (similar to the Cactus Dome on Runit) and the imported topsoil method for soil rehabilitation.

Following our review of each alternative and option, and discussions with the people of Enewetak Atoll, we recommend a remediation program consisting of a combination of soil removal and application of potassium to soil as an integral part of a self-sustaining, agricultural rehabilitation program (i.e., Case # 3). We also recommend that the removed soil be used as fill material for construction of a causeway connecting Enewetak to Medren. The total cost for this combined program, including soil disposal and all supporting elements, is estimated to be $100.1 million. Applying a 15% contingency, our recommended remediation strategy is estimated to cost about $115 million.

Given the collective health detriment associated with resettlement under baseline conditions and the range of values assigned to a statistical life, as described above, Case #3, using causeway disposal and agricultural rehabilitation, at a cost of $115 million, appears to be the most:

1. Feasible regarding implementation,
2. Protective of public health and compliant with the dose limit of 15 mrem per year,
3. Compatible with efforts to establish a self-sustainable soil/ecosystem, and
4. Cost-effective.

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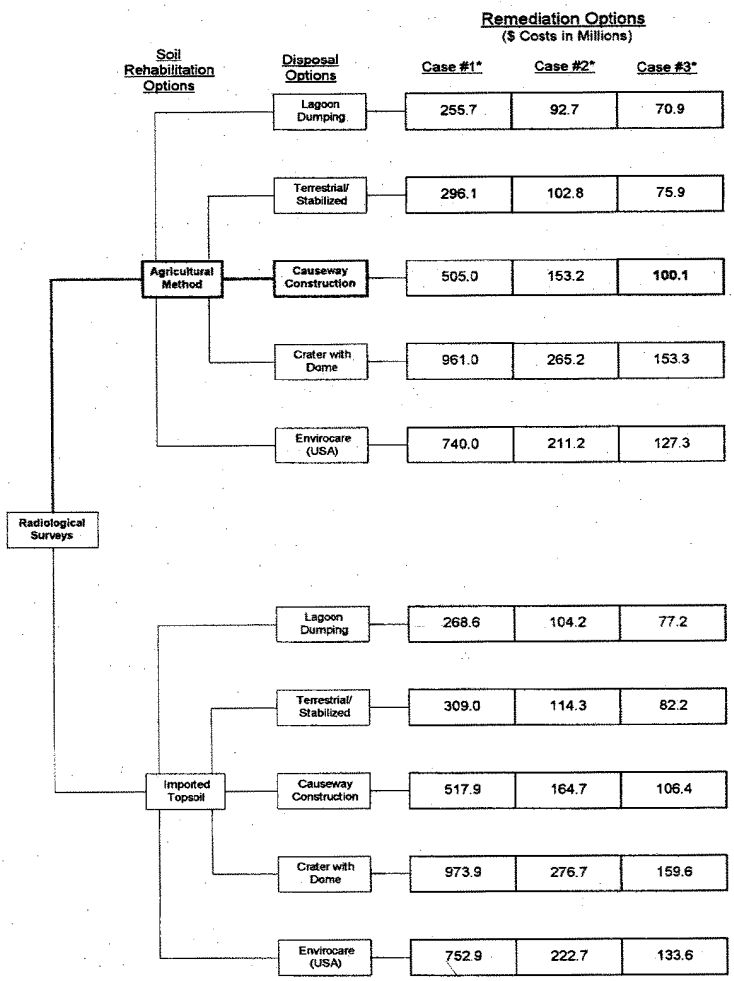
[14] These are special radiological issues specific to Enewetak Atoll that arose as a result of prior cleanup activities and weapons testing that resulted in the dispersal of plutonium fragments.

Figure 1. Summary of remediation cost analysis




* For all remediation options, the cost of $10 million is included for the soil cleanup of the Fig/Quince Area.

Mr. DOOLITTLE. Thank you very much. Mr. deBrum, did I understand you to say that the fund is going to be $23 million short in order to compensate the people the law provides for?

Mr. OSCAR DEBRUM. I think it was $29 million. Yes, sir.

Mr. DOOLITTLE. But there is some discussion now, isn't there, about whether it should be—the law should be changed and applied to anyone affected, not just to people in those four northern atolls? Is that correct?

Mr. OSCAR DEBRUM. Well, yes, Mr. Chairman. We consider that all of the people of the Marshall Islands got affected by the radiation. But those directly affected by the four atoll—people—essentially have been people who are dying without receiving full compensation. This is the reason why we are asking for the additional $29 million so that we——

Mr. DOOLITTLE. Just to deal with the ones with the initial—the standard that is in the law now, the four atolls?

Mr. OSCAR DEBRUM. Right.

Mr. DOOLITTLE. Just out of curiosity, since you grew up in the Marshall Islands, do you remember seeing any of these experiments?

Mr. OSCAR DEBRUM. What was the question, sir?

Mr. DOOLITTLE. Were you able to visually see any of these bombs exploding?

Mr. OSCAR DEBRUM. From a distance, yes. I was in Kwajalein when BRAVO shot was——

Mr. DOOLITTLE. So you could see the——

Mr. OSCAR DEBRUM. Oh, yes. No one could have missed it. It turned night—early morning into daylight. That is how bright it was.

Mr. FALEOMAVAEGA. Mr. Chairman, do you yield?

Mr. DOOLITTLE. Yes.

Mr. FALEOMAVAEGA. I just want to note the gentleman from Hawaii, Mr. Abercrombie, testified earlier in a subcommittee meeting that even those living in Hawaii literally saw the whole sky light just like noonday when one of our nuclear detonations took place in the Marshalls.

So to the extent of he being exposed—even those of us in Samoa also saw this. You are talking about 6,000 or 7,000 miles away from the detonation point. Thank you, Mr. Chairman.

Mr. DOOLITTLE. Remarkable.

Mr. OSCAR DEBRUM. Mr. Chairman, we stand corrected on that. The figure was $22.9 million.

Mr. DOOLITTLE. Thank you.

Mr. OSCAR DEBRUM. Thank you.

Mr. DOOLITTLE. Are you going to raise during these negotiations with the United States government—are you going to raise this issue of whether the area deemed to be affected should be broadened from what it presently is in the law?

Mr. OSCAR DEBRUM. Mr. Chairman, I brought an attorney from my office for a question such as this. With your permission, I would like to have his opinion.

Mr. DOOLITTLE. Certainly.

Mr. OSCAR DEBRUM. Mr. Jim Plasman.

Mr. PLASMAN. Mr. Chairman, James Plasman. I am also a member of the tribunal.

Mr. DOOLITTLE. You can take a seat right down there at the end, if you would like.

Mr. PLASMAN. To the extent that that question involves negotiations between the U.S. and the government of the Marshall Islands, the tribunal will not be formally involved in that matter; and I think that question you should probably be addressing to the government itself.

Mr. DOOLITTLE. Well, let us see. I think that the panel has passed us by already. We will submit it in writing. How is that? I would be interested in the opinion.

There is still a lot of cleanup left to do. Do we sprinkle potassium on places in Nevada and Utah to be able to grow food, or is that something that we just do in the Marshall Islands?

Dr. MAURO. There is no plan to occupy the contaminated areas at the Nevada test sites. However, the use of potassium has been demonstrated to be effective. If, in fact, you plan to grow material in soil that contains slightly elevated levels of cesium, it will get the levels down in the plants that grow there. The work that we performed, it is safe and effective to the limited extent that it can achieve what you are trying to achieve.

Mr. DOOLITTLE. I have heard about the deaths from cancer. Is there any problem with passing on the problems to the babies that are born, or is it just pretty much limited to cancer and those kinds of things to the affected individuals?

Dr. MAURO. What we did in terms of looking at this problem was, in addition to calculating the radiation dose that would occur to people if they were to return without any additional remediation, we also estimated the collective health impact on the population that would live there in the future for the next several hundred years would also bear a potential health burden of adverse health effects which includes primarily cancer but also some genetic effects.

We estimated that the collective health burden on the population would probably be about 10 additional serious illnesses, including cancer and birth defects if there is no additional cleanup.

Mr. DOOLITTLE. I realize my time is up. Indulge me in one further question here. I guess Nevada and the Marshall Islands and the only other place that these weapons have actually been used is in Japan; is that right?

Dr. MAURO. I believe so.

Mr. DOOLITTLE. What does the data show about there in Hiroshima and Nagasaki where similar weapons were used? Do they continue to have problems until this day?

Mr. RICHARDSON. Practically all of our risk estimates for radiation damage are based on the follow-up of the people that were exposed in Hiroshima and Nagasaki. That is the world's largest and most long-continuing epidemiological study.

It still continues today and involves many hundreds of thousands of people. It provides one of the best-documented bases for risk estimates of a carcinogen that we have—the most recent review by the National Academy of Sciences of the risks that were demonstrated in Hiroshima and Nagasaki places a factor of only two

or three—uncertainty at the 95 confidence level. These are the risk estimates generally used in radiation protection today.

Mr. DOOLITTLE. Actually, there are more places. The French have done some testing and the Soviet Union. I guess there are others, aren't there?

Mr. RICHARDSON. Yes, but there are not good records on the exposures in most of those places.

Mr. DOOLITTLE. Okay. Thank you. Mr. Faleomavaega is recognized.

Mr. FALEOMAVAEGA. I thank you, Mr. Chairman. Mr. deBrum, I just wanted to follow up on your statement. You mentioned in reference that Congress enacted the Downwinders' Act of 1990. And the fact that those who were affected during the Nevada testing program that the total—you are talking about kiloton or megaton levels was about 1.16 megatons, compared to what the Marshallese were exposed to is 93 megatons.

I didn't get the gist of your statement, Mr. deBrum, how much compensation that Congress gave to those that were exposed to the Nevada test sites. What was the total appropriation? Was that—well, anyway, we will get that for the record, as my time is running out.

You also indicated, Mr. deBrum, that on a comparative basis, those who were exposed to iodine-131 in measurement in curies, the Marshalls, 6.36 billion curies; the Nevada test site 153 million curies; Chernoble disaster was 40 million curies; and the Hanford operation was only 739,000 curies.

Dr. Richardson, can you explain what this iodine-131 does to human beings in a comparative analysis made of Mr. deBrum's statement?

Mr. RICHARDSON. The effect of iodine exposure is thyroid cancer as well as thyroid nodules. The current estimates on the rate of lethality for thyroid cancer, in portions of the world where there is good hospital care immediately available, easily available, is about one tenth. In areas where good medical care is not nearly as well available, the prognosis is not so good.

Mr. FALEOMAVAEGA. Dr. Richardson, I had raised an earlier question with Secretary Seligman, and I am still not satisfied with his response. If I were a nuclear victim being duly exposed seriously to nuclear contamination as a Marshallese citizen would be and if I wanted to get the best medical advice for examination, where would I go today?

Mr. RICHARDSON. I would hesitate to answer that question. There are many experts in this country. It would depend on the type of radiation damage or sickness or cancer that was involved.

Mr. FALEOMAVAEGA. Let us say iodine-131 exposure.

Mr. RICHARDSON. The interesting thing about cancer that is caused by radiation is that it is no different from cancers that are caused by other agents. It is cancer. And so the best places to go if you have radiogenic cancer are places that are well known generally for cancer treatment in this country. There is no special place to go for a radiation-induced cancer.

Mr. FALEOMAVAEGA. So cancer I get from nuclear detonation is no different than the cancer that I get from other sources?

Mr. RICHARDSON. That is correct.

Mr. FALEOMAVAEGA. What about if the frequency of the cancer happens to be from nuclear contamination?

Mr. RICHARDSON. I am not sure I follow the question.

Mr. FALEOMAVAEGA. Let us say that the whole community in Rongelap were exposed seriously to nuclear contamination and that the frequency of thyroid gland cancer, leukemia and all of these things simply because they have more direct exposure than any other people, if I really wanted to seriously take care of these people as best can—this is why I get very upset because I didn't get the answer. I didn't get the answer. Where would I go today?

The reason I raise Japan was they seem to be the only ones that are very serious about taking care of the human beings that were subjected to Hiroshima and Nagasaki.

Mr. RICHARDSON. What I would suggest is a very careful monitoring program be established in the population for early detection of any possible cancer which should then be treated in the normal way.

Mr. FALEOMAVAEGA. Which we didn't do a very good job. Would you agree or disagree?

Mr. RICHARDSON. I would agree.

Mr. MAURO. I want to put a pitch in for New York University Medical Center where I received my doctorate. They had an extensive program and had the world's best epidemiologist and radiobiologist. That is where I would go.

If I received an elevated dose of radiation, I would go to NYU Medical center, and I would consult with Dr. Arthur Upton and Dr. Roy Shore. And Dr. Roy Shore deals with epidemiological issues, and Dr. Upton deals with medical issues.

Mr. FALEOMAVAEGA. Dr. Mauro, the problem we have—we had a hearing in 1994. We had nuclear scientists disagree even among themselves, one holding up the facts and information simply because he wasn't going to get paid. That to me is just absurd, and I just could not believe that this happens. Mr. Chairman, I would really like some more time.

Mr. DOOLITTLE. Go ahead and take it.

Mr. FALEOMAVAEGA. Dr. Richardson, I am glad you mentioned the fact that you were formerly involved with the international agency—is it the IAEA?

Mr. RICHARDSON. Yes, the International Atomic Energy Agency.

Mr. FALEOMAVAEGA. You were directly involved with that agency?

Mr. RICHARDSON. I served on a series of consultant groups that wrote many of their safety standards.

Mr. FALEOMAVAEGA. I am totally confused at this point in time, Dr. Richardson, in terms of the standards that we apply for those who are exposed to nuclear contamination. You seem to suggest here that EPA has a different standard from DOE as far as U.S. standards are concerned?

Mr. RICHARDSON. DOE doesn't actually have a standard that applies to CERCLA sites. DOE cites other authorities' standards. The standard that is applied in the United States—in the vast majority of cases—is the standard that I mentioned, the 15 millirems per year.

Mr. FALEOMAVAEGA. You mentioned also that we should apply the international standard to the Marshallese?

Mr. RICHARDSON. No. What I said was that when you ask the question what standard should apply to the Marshallese, given that 15 millirems applies in the United States, the IAEA has provided the answer in the form of a principle which says that when a country exposes foreign nationals, it should apply to that situation the same standard that it would apply to its own people.

Mr. FALEOMAVAEGA. Unbeknown to many Americans, the French Government conducted over 200 nuclear tests in the South Pacific in French Polynesia. You know what happened when Chirac broke the moratorium and continued the testing.

Now, after all of these years of concerns, they literally made Swiss cheese out of this one atoll that they kept putting 3,000 meters in depth of these nuclear detonation devices. Now the latest admission by the French Government just came out this week, I believe, that there begins now to be cracks or fissures within this atoll where these nuclear explosions took place.

Do you have an opinion in terms of what might be happening if this fissure, or these cracks, of these 200 nuclear bombs that were exploded in this atoll, what might happen to the environment of the Pacific region?

Mr. RICHARDSON. That is really not a question that I am prepared to answer. That is a question for a geologist or an oceanographer.

Mr. FALEOMAVAEGA. Well, let us say that if you were a closer advisor to the IAEA, what would be your recommendation for IAEA to do at this point in time because of this admission?

Mr. RICHARDSON. Quite frankly, I am not sure the IAEA would have any idea of what to do.

Mr. FALEOMAVAEGA. Thank you, Dr. Richardson. My question this time is for Dr. Mauro. You mentioned that you made a study of Enewetak. Is this strictly an environmental study, or did you also do anything in terms of the people?

Of the 67 nuclear bombs that we exploded in the Marshalls, 44 were conducted in Enewetak. Are you aware of that, Dr. Mauro?

Dr. MAURO. Yes, I am.

Mr. FALEOMAVAEGA. How many people were exposed to this?

Dr. MAURO. I didn't look into that. To answer your question, strictly environmental, our mandate was very narrow: collect the data, characterize the radiological conditions, and evaluate what the radiation doses and health risks would be if people were to return to those islands and what are some plausible ways of remediating that problem. No, I could not answer your question.

Mr. FALEOMAVAEGA. Your recommendation as a result of this study that you conducted from October to April?

Dr. MAURO. My recommendation is what I call a combined approach where you scrape away the contaminated soil that is above a given level, specifically 1.7 pico curies per gram and areas where the contamination that is remaining is above .37 pico curies per gram use potassium.

Mr. FALEOMAVAEGA. Your company doesn't do anything about conducting feasibility studies of nuclear storage programs, do you?

Dr. MAURO. No. Most of our work we do for EPA and the organizations that regulate to the Department of Energy, as opposed to the Department of Energy.

Mr. FALEOMAVAEGA. We did a nuclear storage thing in the Marshalls in this one atoll. Forgive me, Mr. deBrum. What was the name of the atoll?

Mr. OSCAR DEBRUM. Runit.

Mr. FALEOMAVAEGA. About the size of three football fields. It is my understanding now there begins to be leakages underneath this beautiful storage facility that we provided.

Dr. MAURO. Yes, I am familiar with that.

Mr. FALEOMAVAEGA. Do you think your company might be contracted to go down there to find out if this thing is leaking?

Dr. MAURO. There is no doubt that it is leaking. The question is is it substantially changing the inventory of radioactivity that is already in the sediments in the lagoon? We reviewed a lot of work that was done on that subject to see if, in fact, that could result in a significant public health issue.

Part of our recommendation is that from the data that we looked at it appears that, yes, there is a very good likelihood that the material that is contained in the dome is continuing to leach and find its way into the lagoon.

However, the additional curies that would be added is small compared to the curies that are there already. Based on the data that we are looking at, it appears that the fish are not accumulating the radioactivity. For all intents and purposes, the fish that have been sampled in the lagoon and in the nearby ocean contain levels of radionuclide that are well below the criteria.

So on that basis, we consider the limiting pathway by far is cesium 137 in the soil and not the marine environment. Nevertheless, part of our recommendation is to include a comprehensive environmental measurements program around the Runit dome to confirm these findings.

Mr. FALEOMAVAEGA. I don't know, Dr. Mauro, if you are aware that that sigitary poisoning, which is a very deadly toxin as it comes out of the reefs in the Pacific not only in the areas where these nuclear tests were conducted in French Polynesia, but this same level of toxin, sigitary poisoning, is also true in the Marshalls. Are you aware of that?

Dr. MAURO. No, I am not.

Mr. FALEOMAVAEGA. Mr. Chairman, I submit that—all I can say, Mr. Chairman, is the Marshallese people are good people. They are not here for handouts. They are just simply asking us, as they have been trying for how many years now, Mr. Chairman, for our government to meet and to measure up to what we have committed honorably to do for these people, and we have failed miserably.

I sincerely hope, Mr. Chairman, that in the course of the coming months that we will give the Marshallese people their due. They are not asking for handouts. Thank you, Mr. Chairman, and I want to thank the members of the panel.

Mr. DOOLITTLE. Thank you. I too thank the members of the panel. I would ask you to respond expeditiously to any supplementary questions that we may tender to you. With that, we will excuse the members of this panel and the hearing is adjourned.

[Whereupon, at 2 p.m., the Committee was adjourned.]

[Additional material submitted for the record follows.]

STATEMENT OF SENATOR HENCHI BALOS, BIKINI ATOLL REPRESENTATIVE, MARSHALL ISLANDS NITIJELA

Thank you for the opportunity to appear before you today. With me are Mayor Tomaki Juda, Speaker Kessai Note, Councilman Lucky Juda, Council advisor Johnny Johnson, Trust Liaison Jack Niedenthal and legal counsel Jonathan Weisgall

As you know, the U.S. Government moved us off our atoll in 1946 and conducted 23 atomic and hydrogen bomb tests there over the next 12 years, including the largest bomb tests in U.S. history. Meanwhile, our people were moved first to Rongerik Atoll, where we nearly starved to death, then briefly to Kwajalein, and then finally to Kili in 1948.

Sadly, Kili remains home to most Bikinians more than 53 years after the testing began, and life there remains difficult. Kili is a single island. It has no lagoon. Bikini, with its 23 islands and 243-square mile lagoon, is thousands of times bigger. Kili has no sheltered fishing grounds, so the skills we developed for lagoon and ocean life are useless on Kili. This drastic change from life centered around fishing and canoeing to life on an isolated island with no fishing area continues to take a severe toll on our people.

Let me briefly review the issues facing our people today:

*Radiological cleanup:* We are using a Nuclear Claims Tribunal proceeding to get an accurate cost estimate for the radiological cleanup and resettlement of Bikini. We do not yet know the exact price tag, but it will greatly exceed the money in the Bikinians' Resettlement Trust Fund.

You will be hearing today from the other atolls about the huge costs of the legacy of the U.S. nuclear testing program in the Marshall Islands, ranging from health care costs to property damages. These costs add up. In considering whether—and how—to pay for them, I would like to make three points. First, the money appropriated by Congress for Bikini cleanup took into account only the cleanup of Bikini and Eneu, just two of Bikini Atoll's 23 islands. Second, permit me to quote Representative John Seiberling of Ohio, a former member of this Committee, who in 1984 said that "there will be a question as to whether we should go as far as some of us think we need to go, including the restoration of Bikini." His answer: "I would only say that the costs of this program are a tiny fraction of the costs of that nuclear testing program."

Third, I believe that the additional funding needed to complete the cleanup of Bikini should come not from the Interior Department budget, but rather from the budget of the Department of Energy's Environmental Management, which is earmarked for cleanups in 23 states that were involved in the U.S. nuclear weapons testing program. That program is estimated to cost $147 billion, and for the last three years Congress has appropriated an average of $5.75 billion for the program, This is where the cleanup costs for Bikini should come from. And while the $90 million already appropriated sounds like a lot of money, more than double that will be needed to complete the job. But let me remind you that the U.S. Government has spent more than $10 billion—*billion*—at just one U.S. nuclear weapons site—Hanford—without removing any contaminated soil.

*Worker safety:* As the cleanup of Bikini occurs, we have asked our experts to design a radiation protection plan that is at least as low as occupational radiation exposure limits. The cost estimates for Bikini cleanup will include a separate number for worker radiation safety.

*Guarantee of Bikini Atoll's safety:* In 1968, President Lyndon Johnson, relying on a report from the Atomic Energy Commission, announced that Bikini Atoll was safe and that our people could return home. That report proved to be wrong. Thirty years later, scientists from around the world, including the United States, are telling our people once again that it is safe to go back home under certain circumstances. The Bikini people, for reasons I am sure you can understand, do not trust U.S. Government scientists, and there is no one in our community with the expertise to tell us whether or not Bikini can be safely resettled. lf we return home we want the U.S. Government to guarantee Bikini's safety.

When our leaders raised this issue last year with Secretary Babbitt, he said the decision was up to us, not the United States, and he urged them to turn to our own experts for advice. He also said that a written guarantee went against the spirit of trust that is assumed by the Compact. Our response is the same as President Reagan's to the Russians in the 1980s: Trust, but verify. We still want a guarantee of Bikini's safety if we return home.

*Health care:* The 177 health care program, which is supported by a $2 million annual grant under the Section 177 agreement has proven to be inadequate, due in large part to the huge and unexpected enrollment of individuals in the four-attol health care program. For example, in just 13 years, from 1983 to 19996, the number

of people in the program rose from 2,300 to nearly 11,500. Moreover, this funding has not been adjusted for inflation, so the value of the $2 million annual payment, which began in 1988, is now less than half that.

As a result of the failure of this program, the Bikini community has been forced to spend more and more of its resources on health care. Health care costs have, risen from $350,000 in 1994 to $850,000 for this fiscal year. After Bikini cleanup, it's the largest expenditure in the Resettlement Trust Fund.

*U.S.D.A. food:* We thank the Congress for extending the U.S.D.A. food program for another five years. This program will be needed for Bikini people until we are living safely at Bikini Atoll, its soil has been restored and the people are able to eat safely a local diet. We urge that this be included in the extension of the Compact, but without a five-year limitation and with directions to reflect the changes in the population.

*Continuation of the Compact of Free Association:* Although this is a government-to-government question, I want to remind you that the radiation at Bikini will last well after 2001. The United States has a legal responsibility and moral obligation to assist the people of Bikini until they are living safely back on all their islands. That responsibility should not be shifted, to the Government of the Marshall Islands. It did not create the nuclear problem and it lacks the resources and expertise to care for our needs. We hope this Committee will echo the words of Interior Secretary Babbitt, who told us just one year ago that "the United States won't walk away from you or from this obligation, I feel very deeply that we have a moral commitment to you."

*Changed circumstances:* This hearing may not be the place to debate this issue, but let me leave you with one black and white example. For years we thought the only islands at Bikini that were vaporized were the ones near the 1954 Bravo shot. We now know from a 1968 AEC document that the area of one island in the Aerokoj-Eneman group was reduced from 67.1 acres to 25 acres. Forty-two acres were vaporized, nearly two-thirds of the entire island. The destruction to this island was more than twice as much as the destruction caused by the Bravo shot, but this document was not made public until last year. If it been made public during the original Compact negotiations, it would have had an impact on those negotiations.

*3 percent Distribution From Resettlement Trust Fund:* Lastly, we seek your support for a 3 percent distribution from the Resettlement Trust Fund. Congress appropriated funds in 1982 and then again in 1988 to establish this trust fund, which is used both for the cleanup of Bikini and for the ongoing needs of the Bikini people. Thanks to our excellent money managers and our voluntary restraint on the use of these funds, the corpus is still there and the fund has grown by almost 14 percent annually. While the income is not enough for our needs, I am proud to report that for 17 years, every dollar has been accounted for, annual audits are prepared, and monthly financial statements are sent to the Interior Department.

We now know that the cost of cleaning up Bikini will greatly exceed the amount of money in the trust. As a result, it is certain that many Bikini elders, who have not been back on their home islands for more than 53 years, will probably die on Kili without returning home. In light of the strength of the trust and regular audits, the lengthy time a cleanup and restoration will take, and the special circumstances of the elders, we urge you to support a one-time 3 percent distribution from this trust fund, It will not require an appropriation of funds by Congress and it will not diminish the original corpus of the trust.

Thank you. I would be pleased to answer any questions you may have.

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May 24, 1999

The Honorable Don Young
Chairman
Committee on Resources
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

The Republic of the Marshall Islands is glad to have the opportunity to submit this supplemental statement for the record of the May 11th, 1999, hearing on nuclear related issues in the Marshall Islands conducted by the Resources Committee.

The purpose of this submission is threefold: 1.) To respond to the remarkable and inaccurate remarks submitted by the State Department representative who testified before the Committee; 2.) To set the record straight on the economic reform efforts that have occurred and continue in the RMI; 3.) To address some concerns Members of the Committee raised during the hearing regarding the management of funds for nuclear claims victims.

The RMI is pleased that the Committee is taking an active role in issues affecting the Marshall Islands and its people. The RMI Government truly believes the recent hearing is a positive step in the right direction as the RMI and U.S. Congress work to address the nuclear legacy in the islands. The continued support and understanding of the Committee is greatly appreciated.

Sincerely,

Banny deBrum
Ambassador

Attachment

CC: The Honorable George Miller, Ranking Member

**REPUBLIC OF THE MARSHALL ISLANDS**
MAJURO, MARSHALL ISLANDS 96960 CABLE: REPMAR

**RMI GOVERNMENT RESPONSE TO THE MAY 11, 1999 TESTIMONY OF DEPUTY ASSISTANT SECRETARY OF STATE, MR. RALPH BOYCE, TO THE HOUSE RESOURCES COMMITTEE**

At the outset, the RMI Government wants to state for the hearing record that the bilateral relationship between the U.S. and the RMI Governments has never been better. The written testimony of The Honorable Phillip Muller, RMI Minister of Foreign Affairs, outlines the reasons why the relationship is so strong.

The RMI Government does not believe that the statement made by the U.S. State Department to the House Resources Committee on May 11, 1999 reflects the true nature of the bilateral relationship or the state of economic development in the RMI. The RMI Government is offended by Mr. Boyce's testimony because it is inaccurate and undermines the essence of the bilateral relationship between our nations. This submission to the record is in response to Mr. Boyce's statement.

In order to avoid future inaccuracies in the characterization of the bilateral relationship, the RMI Government encourages and welcomes Mr. Boyce to visit the RMI, something that Mr. Boyce has not yet done despite the fact that he claims responsibility for the Republic of the Marshall Islands (whatever that means).

Mutual Benefits:

The RMI wishes to remind Mr. Boyce about the political process that resulted in the creation of the freely associated states. In order to become a nation in free association with the United States, several agreements were arranged between the RMI and the U.S.:

- The RMI's need to separate from the rest of Micronesia and reclaim sovereignty.
- The United States need to maintain perpetual military rights over the area and not simply "strategic denial."
- The requirement for continued economic support for the Marshalls in light of the fact that the islands had been prevented from attaining self-sufficiency by military policies imposed by the United States.
- The need to address damages and residual nuclear contamination resulting from the U.S. testing program.

- The need for an termination of the UN Trusteeship consistent with the Trust Territory Agreement and acceptable to the international community.

Mr. Boyce tries to paint a picture of excessive generosity on the part of the U.S. in the free association relationship. In fact, the U.S. State Department often categorizes the financial assistance it gives to the RMI as "foreign aid." The RMI Government objects to this characterization of U.S. financial assistance to the RMI because money for economic development is guaranteed as part of U.S. Public Law in order to secure U.S. defense interests in the Pacific region. As the Chairman of the Committee very wisely pointed out during the May 11, 1999 hearing, there is a very wide gap between what the Marshalls sacrificed to ensure US leadership in the universe as we know it, and the price that the United States pays for that advantage. The substitution of federal programs and services was the desire of the US at the time of trusteeship termination because it did not wish to allow full independence for the Marshalls. Any arrangement in which the U.S. did not provide extensive economic assistance to the RMI would have fatally compromised the military requirements of the U.S.

The RMI Government also objects to characterizations of the RMI's economy that fail to consider the U.S. Government's involvement in the economy since the Trusteeship. During the Trusteeship, the U.S. Government actively hindered economic development in the RMI as a means of keeping its military rights intact. U.S. and foreign businesses were not allowed to enter the Marshall Islands until the 1973's. Economic dependence on the United States was seen as a means to guarantee military rights in the region. When the Trusteeship ended, the Compact of Free Association acknowledged how the United States failed in its trusteeship responsibilities during the Cold War. These failures culminate in Section 177 and the provisions of the Compact pertaining to the U.S. Nuclear Weapons Testing Program in the RMI. In addition to acknowledging responsibility for its failure to care for the trustees, the U.S. continued military rights, new and residual, in our islands.

On May 11, 1999, Deputy Assistant Secretary of Defense Dr. Kurt Campbell's publicly acknowledged that Kwajalein is of critical military importance to the U.S., and that the U.S. will continue to see Kwajalein as essential to U.S. security interests well into the future. The RMI Government wants to inform the Committee that the State Department's Ambassador to the RMI recently told the RMI Chamber of Commerce that Kwajalein Atoll is archaic and of no current use to the United States military. The U.S. Ambassador indicated that the RMI should contemplate offering Kwajalein to the People's Republic of China.

We agreed to the terms of the new relationship because we understood the necessity for it, and we preferred the freedom it entailed. Freedom with military treaties is much more acceptable than trusteeship without sovereignty or military control without self-government. To downplay the necessity of the unique relationship, the United States insisted on folding into the agreements access to U.S. federal programs that territories enjoy while still proclaiming the sovereignty of the Marshall Islands as fulfillment of its Trusteeship agreement with the United Nations. The Compact went into effect as of the

date of the termination of the United Nations Trusteeship Agreement. The RMI Government believes our bilateral relationship is unique and we are proud of it.

The RMI Economy:

Mr. Boyce states that the "RMI has a spotty record of reform, hampered by an inefficient public sector, rising unemployment, and declining per capita income." We admit that the first few years of free association may have had instances where our new government went overboard in its quest for economic self-sufficiency. It is true that from time-to-time we fell victim to commercial scams brought about by not so scrupulous promoters who viewed our new found relationship with the United States to be fertile grounds for overnight riches. Internally, we invested in expanding our public service in the trusteeship tradition of using government jobs as the main means of distribution of wealth. But we also spent a great deal of our Compact funds investing in an economic infrastructure of power, water, and transportation which, while many assumed should have been there post trusteeship, could not support one atoll, much less a new country of thirty odd atolls and 50,000 people. Many mistakes were made, and we have learned a great deal from those mistakes.

Our programs to reform our government and improve the private sector were put in place only a short time ago with the blessings of the United States Government. Some of these programs have been implemented almost in furious frenzy by the Asian Development Bank at the goading and sometimes with the direct and daily intervention of the State Department through its Ambassador in Majuro. It is sometimes difficult to understand why the programs must have such blind and immediate implementation, devoid of consideration for the fact that our economic infrastructure is yet to be completed and employment in the private sector have yet to materialize.

The RMI economy is showing real signs of growth. We are encouraged, but we also recognize that progress takes time. The RMI Government is disturbed that Mr. Boyce would note the RMI's increased employment rate without indicating that the U.S. Government and the ADB require a 50% payroll reduction in the RMI Government, the largest employer in the RMI, as prerequisite to enjoyment of benefits offered by the Asian Development Bank and its American program directors. Because the ADB and the State Department demand aggressive reduction of the public sector, the RMI is experiencing a reduction in per capita income and an increase in unemployment. The RMI Government is working in cooperation with the private sector and foreign investors to address these issues. Please refer to the attached letter from the RMI Chamber of Commerce highlighting the success of these efforts.

Does Mr. Boyce want us to discontinue our reform programs? Perhaps he should inform his Ambassador in Majuro. It is remarkable, that the United States State Department, working through the Asian Development Bank, would insist on these politically difficult actions on the part of our government, and then have their spokesman complain to Congress that we, the RMI, are increasing unemployment and decreasing per capita

income. The RMI Government would also like to register its deepest concerns regarding the professional conduct of the U.S. Government's Ambassador to the Marshall Islands and her actions which undermine the RMI's efforts to strengthen its economy.

Within the government, our Ministry of Finance has been undergoing a major reformation program since August of 1998. We have replaced the Finance Minister, and the Secretary of Finance who had held the positions for decades. We have initiated, with the help of the Department of Interior and the United States Department of Agriculture, complete retraining of our Finance staff. We are also revamping our financial procedures, improving and expanding our revenue and collections departments, and replacing inefficient employees. Concurrent with President Kabua's policy, the Ministry of Finance is also improving its public accountability and transparency.

Today our Government's financial standing is the best it has been for decades. The RMI has not "exhausted its financial holdings and borrowing capacity," as Mr. Boyce would have you believe. We have chosen to refrain from blindly borrowing from State Department selected sources, such as the Asian Development Bank, because we are incensed by Department of State intervention in our internal affairs with ADB. We do not think this is appropriate behavior for close strategic friends.

We are confident that come FY 2000, we will have in place a financial system that both the RMI and the US will be proud of. We are truly grateful to the Department of Interior and the Department of Agriculture for their assistance in this regard and will continue to work diligently with them to ensure that our system is transparent and efficient. We are intent on keeping up with technology and will work hard to have all these advantages contribute to true financial responsibility and accountability.

Mr. Boyce also maintains in his May 11, 1999 testimony that "the foreign investment climate is not an attractive one." Before 1968, one could not enter the Marshall Islands without the permission of the United States Navy, even if you were a Marshallese citizen. Until 1973, no foreign investment was allowed period. After that, foreigners were allowed to invest only if the High Commissioner in Saipan approved. Not until 1987 was foreign investment freely allowed without colonial preconditions. This, mixed with all the aforementioned shortcomings in the economic infrastructure, did not create an atmosphere conducive to investment. Furthmore, the State Department's Ambassador to the RMI recently told members of the RMI's Chamber of Commerce that there will be no Compact in the future between the RMI and the U.S. The RMI Government asks the Committee why the State Department actively undermines the RMI's attempts to bolster the business environment in the RMI.

The two most attractive areas for future investment for the RMI are fisheries and tourism. In fisheries, we have struggled for a long time to attract shore side fishing activities because, inspite of our very prolific fishing ground, finished fish products from the RMI do not enjoy Compact protection in US markets, the real driving force in any in cannery undertaking. The State Department assisted in the RMI investment in two purse

seiners during the early years of the Compact. Unfortunately, this enterprise went bankrupt, but the RMI is still paying for it. Recently we secured investors for a loining plant in Majuro which, if all goes well, will employ up to three hundred local people. We will export the loins to American Samoa unless the Department of State comes up with another reason why we cannot.

In tourism, we have been cursed with a severe problem in essential air services (EAS), which was discussed during the hearing. It seems we had an EAS agreement that only covered ten of the fifteen years of the Compact. The reason for this oversight is beyond me. Suffice it to say that it is not easy to find investors in tourism when not only is basic infrastructure inadequate but air service is now provided at levels much lower than pre Compact days. Nonetheless, we have made great strides in building basic hotel facilities in Majuro, where members of this committee recently visited, all of which are privately operated and becoming profitable. We have also been focusing on improving our power, water, and roads. Recently, on Likiep Atoll a small but very attractive and unique diving and fishing lodge was built. Bikini has become one of the most popular destinations for wreck diving in the world. Our internal airline, AMI, has been reorganized with a view for privatization and additional planes. Thanks to a recent grant from the Republic of China on Taiwan, airport rehabilitation for both the Capital and the outer islands have been funded and we expect to see tourism move forward.

With these new developments, we hope that Compact Section 111, funds to attract American investment in the Marshall Islands can be appropriated as called for in the agreement so that we can see more development in this critical area. We call on the Department of State to assist in obtaining this Compact mandated U.S. assistance which has not been implemented, and not to wait until the end of the Compact as the current State Department position calls for.

Nuclear Legacy:

As this Committee knows, one of the most difficult issues that our nations have had to consider together is how to address the lingering impacts of the U.S. Nuclear Weapons Testing Program. This is a delicate and emotional issue for the people of the RMI who have suffered immeasurable from the consequences of the testing program.

The RMI Government wishes to express deep regret and horror at Mr. Boyce's characterization of the nuclear legacy in the RMI. First, by maintaining that people in the RMI were exposed to radiation because of an "accidental shift in the wind" is to bring the RMI and U.S. relationship backwards 25 years. We are no longer in the Cold War!

Mr. Boyce accuses the RMI of mismanagement of funds "established to provide compensation for claims related to the 1946-58 U.S. Nuclear Testing Program". This is an outrageous misrepresentation of fact. The Nuclear Claims Fund is entrusted in a US firm, Citibank Smith Barney that controls its investment through U.S. money managers as directed by the 177 agreement. The RMI does not manage these funds. We have also

made known our concern that the interests earned by these funds seem rather low in view of the extremely successful US stock market activity in recent years. Our Finance Secretary has been working with the Bank of New York to ascertain the nature of the problem and if reassignment of the assets is deemed advisable it shall be done.

As to manipulation of payment criteria vis a vis the Nuclear claims, the committee has heard testimony on this matter from the independent Nuclear Claims Tribunal. The testimony of the Department of Energy representative is germane to this question and we believe the Committee has information necessary to correct many of the inconsistencies in this program. We will however continue to fight the efforts at promulgating misinformation on the issue and do our best to improve the State Department's understanding of the nuclear tragedy that befell the Marshallese people.

In addition, the RMI Government would also like to submit for the record its general agreement with the written testimony of Mr. Howard Hills. His testimony accurately reflects the events and rationale behind the Compact negotiations in regards to the claims settlement issues. It is the RMI's position that the Congress continue to work cooperatively with the RMI to address the changed circumstances provision in the Compact, especially in light of all the information that has surfaced (and continues to become known) from the Department of Energy since 1994 and the political process by which the nuclear claims issues were dealt with during the negotiations. The RMI also wishes to note that, in agreeing to allow the Section 177 process to go forward, the U.S. courts specifically contemplated that if that process, as implemented through the Marshall Islands Nuclear Claims Tribunal, resulted in inadequate or unfair compensation, resort back to the U.S. courts was possible. (See Juda v. U.S., 13 Cl.Ct. 667 at 7, affirmed by People of Enewetak v. U.S., 864 F2d, 134 at 137.)

# *Majuro Chamber of Commerce*

P.O. Box 1126 • Majuro, Marshall Islands MH 96960

May 17, 1999

President Imata Kabua
RMI Government
Majuro, MH 96960

Your Excellency,

I would like to take this opportunity to pass along my thanks and appreciation of all you have done to help the private sector. Since I became President of the Majuro Chamber of Commerce at the beginning of the year, I have witnessed the cooperation the RMI government gives to the relationship between it and the chamber, especially through your ministries.

There have been a number of examples of this cooperation, for example, the invitation to members of the private sector to accompany the government on their trip to Taiwan, and including the remainder of the sector in the briefing upon return. We greatly appreciate the efforts of the government for the part they played in acquiring funds to purchase garbage trucks and bins not to mention the ministries acceptance of recommendations from the Chamber of Commerce regarding the equipment. The government also graciously welcomed the chamber to participate in activities during the recent visit of the delegation from the Republic of China and the signing of the Cooperation Agreement.

Your administration has provided general awareness on many of its various initiatives, and we recognize the choice it has made to expand the private sector's involvement in the management and operation of these initiatives such as AirMarshall Islands and the NTC. The invitation to take part in welcoming Aloha Airlines on their brief visit was also greatly appreciated.

We would also like to extend our sincere thanks to the Minister of Finance, Tony deBrum for letting the Chamber of Commerce participate in the design of the new import tax structure, which was passed within 60 days.

I hope this collaboration will continue between the RMI government and the private sector. The joining of hands between these two groups is very healthy for everyone. We can accomplish much by sharing our knowledge and aspirations.

On behalf of the Chamber of Commerce, may I say that we look forward to doing anything we can do to help implement current or future initiatives that will benefit our community.

Respectfully submitted,

Kirtley Pinho
President

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June 8, 1999

The Honorable Don Young
Chairman
Committee on Resources
United States House of Representatives
1324 Longworth Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

This letter is in response to questions you submitted in a letter to His Excellency President Imata Kabua on May 17, 1999 for the record from the Committee's May 11th hearing. As noted below, some of the questions are addressed in the supplemental hearing statement submitted to the Resources Committee by the RMI Government on May 24, 1999. I am also providing you with a letter from the Nuclear Claims Tribunal. This letter is a response to Dr. John Mauro's supplemental statement to the Committee regarding cleanup estimates on the atolls. The RMI Government would appreciate it if these materials could be included in the Committee record as well.

RMI Government responses to the Committee's questions:

1. What are the RMI's views on the written testimony submitted by Howard L. Hills, former United States Counsel for Micronesian Status Negotiations, and particularly the payment of $150 million under the Compact Section 177 as final or subject to increase by the U.S. government upon proof that the $150 million does not adequately cover all reasonable claims?

   The RMI Government agrees with the comments made by Mr. Howard L. Hills in his written testimony to the Committee. His testimony accurately reflects the events and rationale behind the Compact negotiations in regards to the claims settlement issues, and the RMI Government agrees that the $150 million under Compact Section 177 is subject to increase by the U.S. Government upon proof that the $150 million does not adequately cover all reasonable claims. It is important to stress and recognize that the funding provided under the Section 177 Agreement was not based in whole or in part to determine actual damages or just compensation for damages to persons and property. The RMI Government concurs with Mr. Hills that "it is imperative…to recognize that the amount of funding provided under the Section 177 Agreement was a political determination by the parties and was not…and effort to assess or compute actual damages or just compensation for specific injuries or damage to property."

As stated by the RMI Government during the hearing, the RMI is currently finalizing its changed circumstances petition to the U.S. government and believes the petition will demonstrate that injuries resulting from the Nuclear Testing Program have arisen and been discovered in the RMI since the Compact took effect that could not reasonably been known prior to the effective date of the Compact. The RMI Government also believes that the petition will adequately demonstrate that information made available to the RMI from the U.S. Department of Energy since 1994 (and information that still has not been unclassified by the Department) will bolster the RMI's position that the $150 million provided for in the Compact does not adequately cover all reasonable claims nor does it reflect actual damages or just compensation for specific injuries or damage to property.

2. Does the RMI intend to request expansion of the radiation-exposed base of the population, and if so, to what extent?

The RMI Government does intend to request expansion of the radiation-exposed base on the population to include all populations whose health was adversely affected by exposure to radiation from the U.S. Nuclear Weapons Testing Program. The RMI Government will include a request to assist these additional populations when it submits its change circumstances petition to the U.S. Congress.

At this time, the RMI Government is still uncertain as to the extent of the request. This continues to be one of the major issues the RMI Government is working to finalize as it complete the changed circumstances petition. The government is still waiting for information from the Nuclear Claims Tribunal and evaluations from experts reviewing DOE documents before a final decision can be made on this issue. The RMI Government is also concerned about recent testimony by the Department of Energy that not all of the documents regarding the Nuclear Testing Program in the Marshall Islands have been released. In our government's efforts to make a final determination of the actual effects of the testing program and assess just compensation based on all the facts, the DOE's reluctance to release all information continues to stall the process.

3. What is the safety standard under RMI law?

Last year, the Marshall Islands Nuclear Claims Tribunal conducted hearings to establish a radiation protection standard upon which it will rely in considering claims for cleanup and rehabilitation of islands and atolls that remain contaminated as a result of the nuclear testing program. In December, the Tribunal issued a written decision in which it adopted the "policies and criteria" set out by the U.S. Environmental Protection Agency in an August, 1997 memorandum entitled "Establishment of Cleanup Levels for CERCLA

Sites with Radioactive Contamination." That document provides that "if a dose assessment is conducted at the site, then 15 millirem per year (mrem/yr) effective dose equivalent (EDE) should generally be the maximum dose limit for humans."

The safety standard adopted by the NCT stands as the only formal standard adopted in the Marshall Islands relating to radiation safety. Under principles of common law, it may be regarded as the radiation safety standard under RMI law. Thus far, the RMI Government has not addressed this matter otherwise through either regulation or legislation. However, the Nitijela (parliament) has begun work to formalize the standard.

4. How does the RMI view the handling of funds issues raised in other testimony?

The supplemental statement submitted by the RMI Government to the Committee on May 24th specifically addresses this question.

Again, on behalf of the RMI Government and people, I want to express my deep appreciation to you and the Committee for taking an active role in issues affecting the Marshall Islands. Please contact me or the Embassy staff if you have additional questions or concerns.

Sincerely,

Banny de Brum
Ambassador

Enclosure

cc: The Hon. George Miller, Ranking Member

# NUCLEAR CLAIMS TRIBUNAL

REPUBLIC OF THE MARSHALL ISLANDS

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May 31, 1999

Hon. Banny deBrum
Ambassador to the United States
Embassy of the Republic of the Marshall Islands
2433 Massachusetts Avenue. N.W.
Washington, D.C. 20008

Dear Mr. Ambassador:

Information has come to the attention of the Tribunal that subsequent to the May 11 hearing of U.S. House Committee on Resources, Dr. John Mauro submitted a supplemental document for consideration by the Committee. We understand that Dr. Mauro estimated that $500 million would be required to clean up the atolls of Enewetak, Bikini, Rongelap (presumably including Rongerik and Ailinginae), and Utrik so as to comply with the radiation protection standard formally adopted by this Tribunal in December 1998 (i.e. 15 mrem per year above background, as applied by the U.S. EPA for various radiation-contaminated Superfund sites).

The purpose of this letter is to place on the record our belief that, based on his recent testimony to the Tribunal, Dr. Mauro's estimate is limited strictly to cleanup, restoration, and rehabilitation costs for those atolls. The estimate assuredly does not include any consideration of the amounts of compensation that are being sought by those atolls from this Tribunal for loss of use or for consequential damages.

Also for the record, it should be clearly understood that to date no award of compensation has been made for any of those categories of damage that are presently before the Tribunal under the class action property claims filed by those atolls.

Sincerely,

Oscar deBrum
Chairman

**Department of Energy**
Germantown, MD 20874-1290

JUN 14 1999

The Honorable Phillip Muller
Ministry of Foreign Affairs
Republic of the Marshall Islands
Majuro, Marshall Islands 96960

Dear Minister Muller:

The enclosure to this letter updates the status of the Department of Energy's (DOE) disclosure of documents held by it or its predecessor agency, the Atomic Energy Commission (AEC), related to nuclear weapons testing in the Marshall Islands. Completion of the actions outlined in the enclosure will conclude the Department's work to identify and make available the subject information.

To date, DOE has released over 1,000,000 pages of Marshall Islands-related documents. The Department has provided these documents to the Republic of the Marshall Islands (RMI) Government in hardcopy, on CD-ROM, and the documents are available to the general public on the Office of International Health Programs website (www.eh.doe.gov/ihp/).

I will keep you informed of our progress as we complete our ongoing efforts.

Sincerely,

Paul J. Seligman, M.D., M.P.H.
Deputy Assistant Secretary
for Health Studies

Enclosure

cc w/enclosure:
Banny de Brum, RMI Embassy
Oscar deBrum, Nuclear Claims Tribunal
Congressman Don Young, House Committee on Resources
Congressman George Miller, House Committee on Resources
Congressman John Doolittle, House Committee on Resources
Esther Kia'aina, Office of Senator Akaka
Jonathan Weisgall, Esq., Counsel to Kili/Ejit/Bikini
Davor Pevec, Esq., Counsel to Enewetak/Ujelang
Howard Hills, Esq., Counsel to Rongelap Atoll
John Masek, Esq., Counsel to Utirik Atoll

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Enclosure 1

## STATUS OF REMAINING MARSHALL ISLANDS-RELATED DOCUMENT RETRIEVAL AND DECLASSIFICATION TASKS

**Complete**

1. Completion Reports for Operations Crossroads, Ivy, Castle, Redwing and Hardtack 1 (CIC, Las Vegas)

**Status/Action:** **Complete.** These reports were provided to the RMI (box 63) in July 1998. They are available on the Internet at www.eh.doe.gov/ihp.

2. AEC documents at NARA - Atlanta - (Medical Central Files 4NN-326-8505)

**Status/Action:** **Complete.** These documents are available in an open archive for public viewing.

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**Research Complete/Awaiting Declassification**

1. Original transcripts of Atomic Energy Commission (AEC) meetings 1954-1957 (College Park, National Archives Collection NN3-326-93-005)

**Status/Action:** **Research Complete/Awaiting Declassification.** DOE has completed researching these transcripts. Classified documents found at the National Archives Record Administration (NARA) College Park have been submitted to DOE's Office of Declassification at NARA. When declassification is complete, the documents will be released.

2. LANL Project Y, J Division central files and Director's Office files (Collections A-84-019, A91-048, and B-9)

**Status/Action:** **Research Complete/Awaiting Declassification.** A number of classified documents have been identified at LANL. The documents are undergoing declassification review by the DOE/LANL Office of Declassification. When declassification is complete, the documents will be released.

3. Lewis Strauss working files (Collection 1103)

**Status/Action:** **Research Complete/Awaiting Declassification.** DOE has completed researching these files. Unclassified documents are in the process of being released. Classified documents have been submitted to DOE's Office of

Declassification. When declassification is complete, the remaining documents will be released.

4. The 1974 - 1975 Atomic Energy Commission (AEC) Secretary's Files, Collection 9

**Status/Action:** **Research Complete/Awaiting Declassification.** DOE has completed researching these files. Unclassified documents are in the process of being released. Classified documents have been submitted to DOE's Office of Declassification. When declassification is complete, the remaining documents will be released.

5. The 1961-1975 AEC Minutes, Collection 10

**Status/Action:** **Research Complete/Awaiting Declassification.** DOE has completed researching these files. Unclassified documents are in the process of being released. Classified documents have been submitted to DOE's Office of Declassification. When declassification is complete, the remaining documents will be released.

6. BER Radiation Exposure Collection 326-78-3

**Status/Action:** **Research Complete/Awaiting Declassification.** DOE has completed researching these files. Unclassified documents are in the process of being released. Classified documents have been submitted to DOE's Office of Declassification. When declassification is complete, the remaining documents will be released.

7. AEC Secretarial 1958-1966 files (Collection 20)

**Status/Action:** **Research Complete/Most Documents Provided/Some Awaiting Declassification.** These reports were provided to the RMI (box 61) in July 1998. Almost all are available on the Internet at www.eh.doe.gov/ihp. Some classified documents have been submitted to DOE's Office of Declassification. When declassification is complete, the remaining documents will be released.

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**Research Ongoing**

1. Lewis Strauss Collection (Collection 1349)

**Status/Action:** **Research Ongoing.** Record collection search to be completed by fall 1999.

2. Gordon Dunning files (Collection 1339) regarding potential effects of nuclear testing on Downwinders

**Status/Action:** **Research Ongoing.** Record collection search to be completed by fall 1999.

3. Conrad-Ogle Materials (Collection 1387)

**Status/Action:** **Research Ongoing.** Record collection search to be completed by fall 1999.

4. Joint Committee on Atomic Energy (JCAE) hearings (Collection 1172)

**Status/Action:** **Research Ongoing.** Record collection search to be completed by fall 1999.

5. The Classified Sections of the Tommy McCraw Collection 1320

**Status/Action:** **Research Ongoing.** Record collection search to be completed by fall 1999.

**Department of Energy**
Germantown, MD 20874-1290

October 8, 1999

The Honorable Phillip Muller
Ministry of Foreign Affairs
Republic of the Marshall Islands
Majuro, Marshall Islands 96960

Dear Minister Muller:

This letter updates the Department of Energy's (DOE) program to make available documents relating to the health and environmental effects on the Marshallese people and atolls as a result of U.S. atmospheric nuclear tests. In 1993, DOE began extensive searches in our archival record holdings and that of our predecessor agency, the Atomic Energy Commission, for the purpose of openly disclosing this important information to the people of the Republic of the Marshall Islands (RMI). These searches were guided by a joint RMI/DOE working group and with routine input from representatives of the RMI and local atoll governments.

As promised, DOE has completed the mutually agreed on searches of its archival record holdings. The Marshall Islands-related documents identified during these exhaustive reviews spanning 7 years are now publicly available with the exception of some 350 documents still awaiting declassification. When declassification of these final documents is complete, they will be promptly released.

DOE is committed to full and open disclosure of previously unavailable records concerning atmospheric nuclear testing in the Marshall Islands. Carrying out this commitment has made over 14,000 Marshall Islands-related documents (over 1,000,000 pages) publicly available. This substantial collection of information has been provided to you in hard copy, on CD-ROM, and on the Internet at www.eh.doe.gov/ihp/.

DOE also provides public access to over 300,000 atmospheric nuclear testing-related documents through the Coordination and Information Center (CIC) in Las Vegas, Nevada. As a final note, we are pleased to have recently concluded a $45,000 grant to the Marshall Islands Embassy in Washington, D.C., to train Embassy personnel in archival search techniques and facilitate their access to and use of DOE's electronic filing system.

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I believe we have achieved an important milestone with the completion of this work. I look forward to our continued collaboration to solve the many important issues confronting us.

Sincerely,

Paul J. Seligman, M.D., M.P.H.
Deputy Assistant Secretary
for Health Studies

cc: Ambassador Banny de Brum,
RMI Embassy
Oscar deBrum, Nuclear Claims
Tribunal
Davor Pevec, Esq.
Howard Hills, Esq.
John Masek, Esq.
Jonathan Weisgall, Esq.
The Honorable Don Young,
House Resources Committee
The Honorable George Miller,
House Resources Committee
The Honorable John Doolittle
House Resources Committee
Manase Mansur, Staff Member,
House Resources Committee
Esther Kia'aina, Office of Senator Akaka