Testimony of Bill Graham
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Before the House Committee on Foreign Affairs
Subcommittee on Asia, the Pacific, and the Global Environment
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Thank you, Mr. Chairman, for holding this hearing and for recognizing that many nuclear issues remain unresolved for the people of the Republic of the Marshall Islands (RMI). As the Public Advocate at the Nuclear Claims Tribunal from its establishment in 1988 until last July, I directed the office which advised and assisted people to prepare, file, and present their claims before the Tribunal. I regret that I am unable to appear before you in person today and I appreciate the opportunity to submit this written testimony providing an overview of the Tribunal's work and of the current sad state of nuclear claims in the Marshall Islands.

Personal Injury Compensation

General parameters for the operation of the Claims Tribunal are described in Article IV, Claims Adjudication Process, of 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). Article IV Section 3, Governing Law, provides that "In determining any legal issue, the Claims Tribunal may have reference to the laws of the Marshall Islands, including traditional law, to international law and, in the absence of domestic or international law, to the laws of the United States."

The Marshall Islands law establishing the Tribunal provides that "In order to facilitate efficient and uniform payments of compensation, the Tribunal shall issue regulations establishing a list of medical conditions which are irrebuttably presumed to be the result of the Nuclear Testing Program." However, when the Tribunal initially sought advice as to which medical conditions might be presumed to result from radiation exposure, various experts recommended against such an approach, suggesting instead that a "probability of causation" analysis be adopted to determine if a condition suffered by a particular individual was more likely than not caused by radiation from the testing program.

Such an approach requires an individual radiation dose reconstruction but the Tribunal soon realized that there was simply insufficient information about exposure levels in the Marshall Islands to support making more than a handful of individual dose estimates with a reasonable level of precision. There was no monitoring of radiation exposures of the population living in the Marshall Islands during the testing period and virtually no effort to estimate the doses they had received until after the Bravo test, the most powerful nuclear device ever detonated by the U.S., sent radioactive fallout across major portions of this atoll nation beginning on March 1, 1954, and forced evacuation of the people from Rongelap, Ailinginae and Utrik.

But it was not just the Bravo test that caused contamination and not just Rongelap, Ailinginae and Utrik where fallout occurred. At a hearing before the House Committee on Natural Resources on February 24, 1994, Dr. Edward P. Radford testified about an experience he had as an Air Force radiological safety officer on Kwajalein in 1948 during Operation Sandstone, a series consisting of three tests carried out at Enewetak atoll:

> "...we did have fallout on Kwajalein after the second (and largest) of the three tests.

About 14 hours after the test, rain began falling on Kwajalein and our unit of radiation safety officers, about 25 men, was ordered to take our Geiger counters and measure the radioactivity coming down in the rain. We were assigned different areas to monitor and proceeded for the next two or three hours to take readings in the rain on the ground, on tent surfaces, and on any other surfaces present. My experience was that the count rates were high, much greater than background. Both gamma and beta radiation was measured; the beta radiation showed it was fresh fallout. We turned in our results to our commander, but at that time there was no further comment that I can recall about the significance of this "rainout..."

"In 1983, a report prepared by Science Applications International Corporation reviewed the radiation exposures of the 7,000 Naval personnel taking part in Operation Sandstone in 1948. A single measurement of gamma radiation (only) from fallout recorded for Kwajalein (presumably from our survey) at about midnight on May 1, the date of the second (YOKE) test, was higher than any of the greater number of measurements made at Enewetak during the tests. There is little comment in the report about gamma measurements. The highest integrated gamma dose measurements to personnel through May 31 were recorded for Kwajalein residents. These were higher than the Enewetak values and those for people on ships which remained in the Enewetak lagoon during all the tests. No comment is made about the fact that the fallout on Kwajalein was 400 miles away from the test and that fallout on other islands could have been higher than on Kwajalein. The distinct impression is that radiation exposure estimates in this report were determined solely by where measurements were available."

Measurements were not made on those "other islands" where Marshallese lived, even when larger tests were detonated. At 49 kilotons of explosive yield, Yoke was one of the smaller tests conducted in the Marshall Islands, almost insignificant compared to the 18 separate megaton level bombs that would be exploded in the later series of tests. But both during and since the testing program, there was little or no effort to compile exposure data on the people of the Marshall Islands.

In his 1994 testimony, Dr. Radford also said, "I strongly suspect that radioactive fallout from the many American atomic and thermonuclear bombs detonated at Enewetak and Bikini atolls up to 1958 had caused exposure of many Marshallese to significant radiation doses. It will be difficult to establish objective evidence of this exposure..."

Even these many year later, Dr. Radford's concluding remarks at that hearing still have a chilling effect:

"When Operation Sandstone of Joint Task Force Seven left the Pacific and returned home, eventually all members of the Task Force were sent a book containing a photographic history of the bomb tests. This book still brings back many memories to me. On the last page of the book, opposite a color picture of a fireball rising above an Enewetak island, is the following text: "The atomic energy Proving Ground at Eniwetok lies ready and waiting for man's next adventure in atomic wonderland." It may have been a wonderland for nuclear physicists, but for the Marshall Islanders it was part of their home, and the bomb tests were not a wonderland but became a place of fear and danger."

During 1989, the Tribunal became aware of legislation enacted by the U.S. Congress with regard to compensation of radiation-exposed veterans. With certain minor restrictions, the Radiation-Exposed Veterans Compensation Act of 1988 (PL 100-321) provided a "presumption of service connection" for 13 specified diseases. The report of the House Veterans' Affairs Committee in

support of that legislation noted that "It has become apparent that such evidence will never be available in the cases of veterans covered under the provisions of the reported bill because the level of exposure cannot be verified."

In addition, the Tribunal was fortunate enough to secure the services of Dr. Robert W. Miller to advise on diseases known to be related to radiation exposure. Dr. Miller had been a pioneer in the field of epidemiological research at the Atomic Bomb Casualty Commission/Radiation Effects Research Foundation in Hiroshima in the 1950s and was appointed the first Chief of Epidemiology at the National Cancer Institute (NCI) when he returned to the U.S. in 1961.[1] He held the position of Chief of Clinical Epidemiology at NCI when he traveled to Majuro in December 1989 to consult in person with the Tribunal judges and officers.

Dr. Miller was well aware of the law providing benefits on a presumptive basis to atomic veterans diagnosed with a listed medical condition and he informed the Tribunal that legislation was at that time being considered by Congress to compensate civilians who lived downwind from the Nevada Test Site, also on a presumptive basis for the same 13 medical conditions.

Given the provision in the 177 Agreement that the Tribunal have reference to the laws of the United States, and the acceptance by the U.S. of the responsibility for compensation owing to the citizens of the Marshall Islands for loss or damage to property or person resulting from the nuclear testing program (in Section 177(a) of the Compact), the Tribunal determined that Marshallese claimants should be given no less benefit of the doubt than that extended to U.S. citizens who were also affected by their government's atomic testing.

Accordingly, the Tribunal advised Dr. Miller that it intended to implement a compensation program similar to the U.S. presumptive programs and to adopt the 13 conditions on the Congressional list as presumed to be the result of the nuclear testing program. With that understanding, he presented an additional list of 10 conditions known to be induced by radiation and recommended that both lists apply to Marshallese who were living in the islands during the 1946-1958 testing period, including those *in utero* at the ending date. In January 1990, the Tribunal adopted regulations establishing an initial list of 23 presumed conditions and began the task of setting compensation amounts for each.

The Tribunal's initial efforts to establish amounts of compensation for personal injuries took into consideration the compensation given to exposed Marshall Islanders who had been taken to the U.S. for medical care beginning in the 1960s. Under U.S. Public Law 95-134, lump sum payments of $25,000 were made to many individuals for radiation-related illnesses, including those who had partial thyroidectomies for non-malignant thyroid nodules. Under the same law, a "compassionate payment" was made in the amount of $100,000 to any individual who expired from a radiation-related malignancy such as leukemia.

When the Radiation Exposure Compensation Act (RECA) was enacted as Public Law 101-426 in 1990, another benchmark was established. In that law, Congress found that fallout emitted from the atmospheric nuclear tests at the Nevada Test Site exposed people "to radiation that is presumed to have generated an excess of cancers among those individuals" and provided that a lump sum compensation payment in the amount of $50,000 be made for specified radiogenic diseases contracted by people who were physically present in an "affected area" during the periods of atmospheric testing in Nevada. The affected areas include points 450 miles or more from the Nevada Test Site.

1 Dr. Miller's death was mourned by a colleague in an article published in the 2006 issue of RERF Update, accessible at http://www.rerf.or.jp/library/update/pdf/2006vol17.pdf

In deciding on the amounts of compensation, the Tribunal was also guided by the degree to which a particular illness generally affects the quality of a person's life, including the degree to which it is life-threatening. As its starting point, the Tribunal used the $50,000 paid under RECA for a thyroid cancer and scaled the awards for other conditions up or down from that amount based on whether they were considered more serious. For example, a usually fatal leukemia or stomach cancer was awarded $125,000 while the amount for a benign thyroid nodule not requiring surgery was set at $12,500.

Another factor acknowledged by the Tribunal was the pro-rata nature of the payment of its awards, as required under the 177 Agreement, and the likelihood that full payment the awards will never be made. That has in fact been the case as even those who were among the first to be awarded compensation and who received an initial payment of 20% of their awards in August or September 1991 and annual pro-rata payments in varying percentages every October from 1991-2005 have been paid only 91% of their net compensation.

In July 1991, the Tribunal amended the personal injury regulations it had adopted the previous year, adding salivary gland tumors to the list, making acute radiation sickness and beta burns separate conditions, and including the amounts of compensation for each condition. The next month, it began to approve awards and make initial payments to people who had been physically present in the Marshall Islands during the testing period and who had been medically diagnosed as having one of the 25 listed medical conditions.

Following initial establishment of its program, the Tribunal conducted several extensive reviews of the latest scientific and medical research about the effects of radiation on human beings. Those efforts benefitted greatly from the recommendations and expert opinions of the aforementioned Dr. Edward Radford.[2] Dr. Radford was Chairman of the National Academy of Sciences Advisory Committee on Biological Effects of Ionizing Radiation (BEIR III) from 1978-80, was a member of the original BEIR I committee from 1970-72, and served as a Visiting Scientist at the Radiation Effects Research Foundation in Hiroshima, Japan, from 1983-84.

Based on those reviews, two additions were made to the Tribunal's list of presumed medical conditions in 1993, seven more conditions were added in 1996, one in 1998, and one more in 2003. The current list includes 36 conditions.

The similarities between the Downwinders and the Marshall Islands situations provided justification for adoption of the presumptive approach by the Tribunal. In both cases, the affected populations were unknowing victims of radioactive fallout from the testing program. In both cases, there was little effort made to monitor exposures to the population at large. And although the Marshall Islands is geographically somewhat larger than the area covered by the Downwinders program, the total yield of the nuclear tests in the Marshall Islands was almost 100 times greater than at Nevada.

The levels of radiation exposure at every atoll in the Marshall Islands were also higher than the average of the six counties closest to the Nevada test site, as explained in an attachment to the statement submitted to this Subcommittee in July 2007 by then Tribunal Chairman James Plasman.

In addition, the U.S. Centers for Disease Control and Prevention (CDC) released two reports

2 Informative obituaries for Dr. Radford are accessible at http://www.nytimes.com/2001/10/22/world/edward-radford-79-scholar-of-the-risks-from-radiation.html and http://www.independent.co.uk/news/obituaries/dr-edward-radford-755392.html

during 2007 which discuss estimated radiation doses from the testing program.[3] One of those reports provides a comprehensive review of the original human specimen data and the exposure models that were used to derive previous thyroid dose estimates, revealing multiple errors and strongly suggesting that those doses are likely to have been substantially underestimated. Thyroid conditions account for more than half of the personal injury awards made by the Tribunal.

Under the RECA program, more than 22,000 claims have been approved and nearly $1.5 billion paid.[4] Compensation is also awarded on a presumptive basis, without the completion of a radiation dose reconstruction or determination of the probability of causation, to members of Special Exposure Cohorts established under the Energy Employees Occupational Illness and Exposure Act. There are currently 46 sites for which at least some workers have Special Exposure Cohort status and are entitled to $150,000 in compensation and payment of medical expenses. More than 10,000 Special Exposure Cohort cases have been accepted and more than $1.5 billion in compensation paid.[5]

As of December 31, 2008, the Tribunal had made personal injury awards to or on behalf of 2,127 individuals totaling $96,658,250 in compensation. Only $73,526,698 of that total was actually paid, leaving a balance owed of $23,131,552. No awards have been made since that time.

Many more personal injury awards would have been made by the Tribunal had adequate medical diagnostic services been available in the Marshall Islands. In fact, the absence of any diagnosis was the norm for most people throughout the period of nuclear testing in the Marshall Islands. The 1958 population census indicates that two-thirds of the people (9,464 of the total of 14,163) lived in the outer islands where the diagnostic equipment available to the local health aide generally consisted of a stethoscope and a thermometer. Even at the Majuro and Ebeye hospitals, the diagnostic equipment and laboratory facilities were very basic for all of the testing period and throughout virtually all of the trusteeship era.

From 1990-1993, the Tribunal coordinated the work of a small team of medical doctors who conducted clinics throughout the Marshall Islands for the primary purpose of examining and diagnosing conditions in individuals with personal injury claims. Without their dedicated efforts, many hundreds of outer island claimants would have no medical diagnosis of their conditions.

Still, there are literally hundreds of claimants and deceased individuals claimed by their relatives for whom the summary diagnosis is "cancer of unknown primary," insufficient evidence for an award of compensation from the Tribunal. In addition, missing documentation of diagnoses which were made is a common situation, especially for deceased people. Many medical records for Marshall Islanders were destroyed in a fire at the old hospital and others were destroyed when the move was made to the current facility.

The more one understands about the realities of the personal injuries suffered by Marshallese as a result of the nuclear testing program, the more difficult it is to accept the unpaid awards as a fair and just outcome.

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3 Both reports were prepared by S. Cohen & Associates, an independent firm that has provided scientific expertise to claimants before the Tribunal since 1998. The reports are titled "Historical Dose Estimates to the GI Tract of Marshall Islanders Exposed to BRAVO Fallout" and "An Assessment of Thyroid Dose Models Used for Dose Reconstruction."

4 See Claims to Date Summary at http://www.justice.gov/civil/omp/omi/Tre_SysClaimsToDateSum.pdf

5 See EEOICP Statistics at http://www.dol.gov/owcp/energy/regs/compliance/weeklystats.htm#1

Property Damage

The first major step in the Tribunal's consideration of property damage claims was to establish a radiation protection standard to be applied in determining the extent of radiological cleanup and restoration required. To address the many complex issues involved in making such determinations, the Tribunal conducted adversarial proceedings which included formal hearings and the taking of detailed testimony and recommendations from various recognized expert witnesses.

That process was concluded in late 1998 based on relevant precedents in international and U.S. law. At that time, the Tribunal formally adopted policies and criteria established by the International Atomic Energy Agency (IAEA) and the U.S. Environmental Protection Agency (EPA) as the basis for its restoration and remediation standard. An IAEA safety series publication recommended that "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."[6] In the U.S., the EPA defines that protection level to be no more than a 15 millirem per year (mrem/yr) maximum effective dose equivalent for humans.[7]

Comprehensive adjudicatory proceedings then commenced before the Tribunal on the claims for property damage in the four atolls most obviously affected by the nuclear testing program. In those proceedings, the Tribunal relied both on the Act establishing it and upon U.S. legal authorities, employing standard hearing procedures and methodologies generally used in American courts for property damage cases.

The first of those claims was decided in 2000 when the Tribunal awarded $385,894,500 million in net compensation to the People of Enewetak for three major types of damage: $107,810,000 for radiological cleanup and restoration; $244 million for past and future loss of use of the atoll; and $34,084,500 for consequential damages including hardship and suffering.

A decision in 2001 awarded $563,315,500 to the People of Bikini in the following amounts and categories of damage: $251,500,000 for restoration and radiological cleanup; $278,000,000 for past and future loss of use of Bikini Atoll; and $33,815,500 for the hardships suffered by the People of Bikini as a result of their relocation attendant to their loss of use.

Partial payments were made on those awards in 2002 and 2003 totaling $1.6 million for Enewetak and nearly $2.3 million for Bikini.

In December 2006, the Tribunal awarded compensation in the amount of $307,356,398.91 in the class action claim for property damage at Utrik and Taka atolls. That amount included $5 million for a potassium treatment program to reduce the levels of radioactive cesium in the food chain by blocking its uptake by local plants; $257,060,898.91 for impaired property use as a result of radioactive contamination; and $45,295,500 for consequential damages including emotional distress and mental suffering.

In a decision issued in April 2007, the Tribunal awarded $1,031,231,200 for property damages in Rongelap, Rongerik and Ailinginae atolls. That total included $212 million for radiological cleanup and restoration; $784.5 million for past and future loss of use of the three atolls; and $34,731,200 for a variety of consequential damages including $125,000 for medical experimentation conducted on 10 individuals. In April 2008, that decision was amended to increase the awards for medical

6 Safety Series No. 67, Assigning a Value to Transboundary Radiation Exposure, IAEA 1985

7 EPA memo dated Aug 22 1997 entitled "Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination"

experimentation by $237,500 to reflect the involvement of 19 additional subjects.

No payments have been made on either of the Utrik or Rongelap awards.

Because the Tribunal awards for property damage include provision for post-judgment interest on the loss of use and restoration amounts, it is not possible to state precisely the current balances due on those awards. The simplest way to state the total balance owed on property damage awards is "$2,284,108,436, plus interest due from the dates of the respective awards." For the record, that total is derived as follows:

Enewetak	$ 384,247,017.35	($385,894,500 original total less $1,647,482.65 in payments)
Bikini	561,036,320.17	($563,315,500 original total less $2,279,179.83 in payments)
Utrik	307,356,398.91	(original net total)
Rongelap	1,031,468,700.00	($1,031,231,200 original total plus $237,500 April 2008 amendment)
	$2,284,108,436.43	

The decisions of the Tribunal in each of the four property damage claims described above can be accessed at http://www.nuclearclaimstribunal.com/award.htm.

In those decisions, the Tribunal awarded a net total of $531.3 million for cleanup of residual radioactive contamination and soil remediation in those atolls to ensure the same level of safety that would be required in the U.S. That amount is above and beyond what the U.S. has already done in the way of cleanup and reflects deductions made by the Tribunal for the full amounts of the various resettlement trust funds provided by the U.S. for those atolls.

The awards made for cleanup of residual radioactive contamination were based on standard U.S. methodology for selecting remedial and disposal actions from a variety of alternatives. For example, at Enewetak, rather than remove all soil with radiation levels which could produce doses in excess of 15 mrem/yr and dispose of it in a crater with dome, at an estimated cost of $947 million, the Tribunal opted for an approach involving treatment of many areas with potassium, reducing the volume of soil to be removed and using that soil as fill material for a causeway connecting the two main residential islands, at a total cost of $103.3 million. Similarly, the strategies considered for Bikini were estimated to cost from $217 million to $1.4 billion but only $251.5 million was awarded, based on using the same cleanup method recommended by the U.S. Department of Energy's environmental contractor, Lawrence Livermore National Laboratory.

The property damage awards made by the Tribunal are a testament to the past and present levels of radioactive contamination and denied use of the homelands of these atolls' people. The inability of the Fund to support payment of these awards is regarded by the Tribunal as evidence of the manifest inadequacy of the settlement under the Section 177 Agreement for damages to the people of the Marshall Islands resulting from the U.S. Nuclear Testing Program. Fairness and justice demand that this situation not be ignored.

Medical Experimentation

One of the consequential damages for which the Tribunal awarded compensation in the property claims for Rongelap, Ailinginae and Rongerik atolls was medical experimentation, a type of award which the Tribunal had not made previously. Two human studies were specifically recognized, one involving the chelating agent EDTA and the other the radioactive tracer Chromium-51.

These two studies were considered by the President's Advisory Committee on Human Radiation Experiments (ACHRE) which noted in its October 1995 Final Report that they were examples of research "that appear to have been nontherapeutic: this research was intended to learn about radiation effects in this population and offered little or no prospect to benefit to the individual subjects."[8]

However, the Committee stated that "we found no evidence to support the claim that the exposures of the Marshallese, either initially or after resettlement, were motivated by research purposes." In its Conclusions About the Marshallese section, the Final Report states, "The Committee found no evidence that the initial exposure of the Rongelapese or their later relocation constituted a deliberate human experiment. On the contrary, the Committee believes that the AEC had an ethical imperative to take advantage of the unique opportunity posed by the fallout from Bravo to learn as much as possible about radiation effects in humans."

It is difficult to agree with that assessment when one considers the broad program of medical research and experimentation that was conducted on the people who lived during the period from 1957 to 1985 in the radiation laboratory that was Rongelap. As documented in Attachment 1, the decision to return the population to the atoll in 1957 was driven by the need for "greater knowledge of such effects on human beings," by the perspective that "the habitation of these people on the island will afford most valuable ecological data on human beings," and by the knowledge that "various radioisotopes present can be traced from the soil, through the food chain, and into the human beings, where the tissue and organ distribution, biological half-lives, and excretion rates can be studied."

Of course the people wanted to return to their homelands after three years in exile but that was not a desire based on knowledge of the risks involved. And of course the knowledge gained about the effects of radiation in humans is of benefit to science and to the entire world. And certainly it is easier to see and understand the experimental nature of the return in retrospect than it was at the time the decisions were made and put into action.

But none of those facts make the situation any less tragic for those who were the unwitting subjects of that experiment.

The Nuclear Claims Fund

As required under Article I, Section 1 of the 177 Agreement, the Fund was created in late 1986 when the U.S. provided to the Marshall Islands the sum of $150 million. The Fund was to be invested with the performance goal of producing average annual proceeds of at least $18 million for disbursement in accordance with an agreed upon schedule. In the event that annual proceeds were not sufficient to make the required disbursements, the 177 Agreement provided that the corpus of the Fund be used to supplement proceeds in the amount of the difference.

Inherent in the RMI's acceptance of the $150 million settlement as adequate compensation was the its expectation that the Fund would actually achieve the performance goal, providing an $18 million annual annuity "to create and maintain, in perpetuity, a means to address past, present and future consequences of the Nuclear Testing Program,"[Preamble to the 177 Agreement]

Sadly, that expectation was not matched by reality. When the Nuclear Claims Tribunal began its

8 Chapter 12 of the ACHRE Final Report, entitled The Marshallese, is accessible at http://www.hss.energy.gov/healthsafety/ohre/roadmap/achre/chap12_3.html

operations in mid-1988, there was serious concern as to whether the Fund would be able to make all of the required distributions before being exhausted. A huge loss in the Fund's value occurred in October 1987, less than one year into its existence and just when it had become fully invested. As a result of the stock market crash that month, the value was reduced to approximately $132 million by the end of 1987. Any thought that the Fund could earn the $18 million per year was gone, replaced by the prospect of routine incursions into the corpus in order to make the required distributions.

In September 1992, the U.S. General Accounting Office (GAO) issued a Report to Congressional Requesters addressing the Status of the Nuclear Claims Trust Fund (GAO/NSIAD-92-229). That report stated that "For the trust fund to meet the required disbursements and retain the original $150 million in principal, a 12.5-percent annual return would have been required."

By the end of 1991, the Fund had rebounded to a value of $138 million but that was largely due to the fact that the Tribunal had drawn only about $3.2 million of the $16.5 million in accumulated annual allocations available to it for payment of compensation awards. Given the value at that time, GAO calculated that average annual earnings of 16.4 percent would be required in order to make all payments and restore the Fund value to the original $150 million by the year 2001.

Such a rate of return never materialized, despite the pronouncement of the U.S. government that "the 1987 stock market 'correction'… in no way impairs the long-term performance and viability of the Fund," because it anticipated that those losses "will be fully restored in the near future." [Brief of the United States at 34, 45, *People of Bikini v. United States*, Nos. 88-1206-1207-1208 (Fed. Cir., June 24, 1988)]

Instead, after the first 15-years of its existence and disbursement of the $270 million in required distributions, the Fund stood at less than $44 million in October 2001, a time when more than $30 million was owed on personal injury awards, nothing had been paid on nearly $1 billion of property damage awards, and the health care program was expecting at least the $2 million in annual funding that it had received under the 177 Agreement for each of the previous 15 years. In a 2005 report on Trust Funds in the Pacific, the Asian Development Bank said of the Nuclear Claims Fund, "while it was originally designed as a true trust fund, it effectively has become a sinking fund."[9]

The Fund is presently on the brink of exhaustion with a balance of approximately $71,000.

Some have argued that the Tribunal exceeded the amount of money provided through the Settlement Agreement for awards of compensation. On the contrary, the Section 177 Agreement clearly acknowledges that the amount of money provided for payment of awards was not limited to any particular figure. Article II, Section 7(c) provides that "Commencing on the fifteenth anniversary of the effective date of this Agreement, not less than 75% of Annual Proceeds shall be available for disbursement in whole or partial payment of monetary awards made by the Claims Tribunal."

Sadly, however, due to the inadequacy of the Fund and of its performance, there are virtually no annual proceeds to support such payments. The failure of the Fund to perform as expected is a failure to deliver on a promise.

Conclusion/Recommendations

Marshall Islanders with compensation awards which can never be paid from the Nuclear Claims Fund are entitled to another chance at the justice that the settlement agreement and the Tribunal have

9 See page 51 at http://www.adb.org/Documents/Reports/ Trust-Funds-Pacific/trust-funds.pdf

not been able to provide to them. Surely no one can consider the present situation to be a fair and just outcome.

An April 2006 report by the Harvard Law Student Advocates for Human Rights entitled "Keeping the Promise" evaluates the continuing U.S. obligations arising out of the nuclear testing program. It concludes that "the promise of 'just and adequate' compensation has not been fulfilled." The report recommends that Congress take actions to address outstanding personal injury and property damage awards and health concerns of nuclear-affected populations.[10]

The Congressional Reference procedure appears to have great potential to address the injustices which remain unresolved. It is understood that the proceedings will be adversarial and that the outcome may not support a recommendation for full payment of the awards made by the Nuclear Claims Tribunal. However, claimants will have the opportunity to submit evidence and present arguments before an impartial and independent forum where a finding of facts and a judicial determination can be made and a fully informed recommendation regarding the merits of their claims provided to Congress so that it can decide how to proceed. That is truly an encouraging prospect which I strongly encourage this Committee to pursue.

In addition, consideration may be given to replenishing to Nuclear Claims Fund. Given that it was expected to produce funds adequate to meet all the required distributions over its first 15 years, while leaving the corpus intact, it wound up more than $106 million short of that goal. That is the amount that had to be taken from the corpus in order to make those distributions, leaving the Fund with a balance of less than $44 million in October 2001.

Consideration may also be given to appropriating the $531 million in additional funding needed to conduct necessary radiological cleanup and restoration activities in the atolls which have property damage awards from the Tribunal totaling that amount.

Again, I thank the Chairman and the Members of this Committee for the opportunity to submit this testimony and for your attention to the many unresolved nuclear issues in the Marshall Islands.

10 The report is available online at http://archives.pireport.org/archive/2006/April/MarshallIslandsReport.pdf

Attachment 1

Partial Chronology of Statements, Opinions and Views Relating to the Resettlement of Rongelap Atoll in 1957

Following their exposures to high levels of radioactive fallout from the Bravo thermonuclear bomb test on March 1, 1954, a total of 82 people were evacuated from Rongelap and Ailinginae atolls and moved to Kwajalein atoll where they stayed in emergency quarters on Ebeye for approximately three months. In June 1954, they were moved to a newly constructed village on Ejit Island in Majuro atoll where they lived for three years until they were returned to Rongelap in June 1957.

Although various radiological surveys of the atoll and its biota had been conducted in the 40 months that the people were away, no effort to clean up the radioactive contamination had been made prior to their return.

The following statements, views and opinions have been excerpted from various communications and reports dealing with Rongelap in the 1950s and 1960s. Readers may decide for themselves whether or not the return to their homelands, at that time and under those circumstances, was in the best interests of the people of Rongelap.

10 April 1954 communication to Commander Joint Task Force Seven from Clinton S. Maupin, Colonel, (MC) USA, Staff Surgeon
http://www.hss.energy.gov/healthsafety/ihs/marshall/collection/data/ihp1a/3259_.pdf

"In view of the fact that this group received a dose of radiation which was marginal from a standpoint of severe morbidity, justification cannot be made for exposure to significant additional radiation. Therefore, based on the concept that the recovery period should correspond in time to the permissible dose for accumulation, it is recommended that these patients not be exposed to radiation except for essential diagnostic or therapeutic radiation for a period of eight years."

21 April 1954 memorandum from Project Officer, Project 4.1 (E. P. Cronkite, CDR MC USN) to Commander, Joint Task Force Seven
http://www.hss.energy.gov/healthsafety/ihs/marshall/collection/data/ihp1b/7576_.pdf

"The group should be exposed to no further radiation external or internal with the exception of essential diagnostic and therapeutic x-ray for at least 12 years. If allowance is made for unknown effects of surface dose and internal deposition there probably should be no exposure for rest of natural lives."

"They should be located where medical care is easily and quickly available and satisfactory communications exist."

"At 2-4 week intervals urine should be collected for the study of excretion of fission products ... laboratories desire to follow excretion rates indefinitely."

"It is appreciated that the above recommendations virtually prohibit the return of this group to their home atoll. However, it is probable that returning these people, who have already received excessively large exposure, would subject them to radiation levels above the United States AEC peace time maximum permissible doses for both external and internal radiation. This is particularly true since the northern islands of the atoll which are used as farm islands and a source of food supply for the Rongelap people received up to ten times the fall-out

that occurred on Rongelap. These people may live for a month or so per year on the northern islands."

October-November 1955 Radiobiological Resurvey of Rongelap and Ailinginae Atolls, Applied Fisheries Laboratory, University of Washington, Seattle
http://www.hss.energy.gov/healthsafety/ihs/marshall/collection/data/ihp1c/0696_a.pdf

"The highest value ... of any soil sample of the October-November collections, oddly, was found in the top 3 inches of soil from Rongelap Island." (first page of Abstract)

"In general, the levels in the plants were highest at the northern islands of Kabelle and Labaredj. The only exception was the corm of the arrowroot plant in which the Rongelap Island value was almost three times greater than for the other collecting areas. ... It is probable that the arrowroot at Rongelap Island was collected in relatively 'hot' spots. In the early surveys it was found that the meter readings were highest in soil depressions and in pits such as those used by the natives for growing crops, and this may account for the values." (pages 27 and 31)

"The activity in the coconuts does not appear to be declining appreciably with time, but since it is due mostly to Cs-137, it does not present a health problem at this time." (page 32)

"Edible plants other than coconuts have been found to contain levels of Sr-90 which are above the tolerance level as defined in the Radiological Health Handbook. Among these plants are Pandanus, papaya, Morinda, squash, and possibly arrowroot." (page 32)

"In the January 28-30, 1955 collections, the northern Rongelap terns from Gejen, Kabelle and Labaredj Islands were found to contain less radioactive materials per unit weight than did the terns from the southern island of Rongelap. This finding was unexpected because of the fact that the average levels of radioactive contamination were higher in the northern than in the southern islands." (page 42)

"the Rongelap natives usually collect birds at Ailinginae Atoll ... Ailinginae terns contain, on the average, about twice as much radioactivity as the terns from the northern islands of Rongelap Atoll." (page 42)

March 1957 Medical Survey of Rongelap and Utrik People Three Years After Exposure to Radioactive Fallout, Robert A. Conard, M.D. et al, Brookhaven National Laboratory, Concluding Remarks, page 22 (report of examinations carried out in Majuro)
http://www.hss.energy.gov/healthsafety/ihs/marshall/collection/data/ihp1a/4569_.pdf

"The increasingly widespread uses of radioactive sources in research and industry increase the possibility of exposure of people to various forms of ionizing radiation. Therefore, greater knowledge of such effects on human beings is badly needed."

"Considerable research is being carried out on effects of radiation on animals, but there are obvious limitations in extrapolating such data to the human species. Human experimentation, particularly with regard to whole-body radiation effects, is limited to therapeutic use of radiation in diseased people. Though such data are useful, they must be evaluated with caution. The most valuable information about human radiation effects, therefore, has come from people irradiated from atomic bombs such as the Japanese people of Hiroshima and Nagasaki and the Marshallese..."

"The group of irradiated Marshallese people offers a most valuable source of data on human beings who have sustained injury from all the possible modes of exposure-penetrating radiation, beta radiation of the skin, and internal absorption of radioactive materials. The acute and subacute effects of these different forms of radiation have been well documented and for the most part have subsided."

"Even though, as pointed out, the radioactive contamination of Rongelap Island is considered perfectly safe for human habitation, the levels of activity are higher than those found in other inhabited locations in the world. The habitation of these people on the island will afford most valuable ecological radiation data on human beings..."

"... the various radioisotopes present can be traced from the soil, through the food chain, and into the human beings, where the tissue and organ distribution, biological half-lives, and excretion rates can be studied."

"Several factors favorably influence these studies on the Marshallese. The exposed and unexposed Rongelap people are interrelated and represent a remarkably homogeneous population. They live under the same environmental, sociological, and economic conditions and are likely to remain together as a group indefinitely."

February 13, 1958, Office Memorandum to Dr. A. H. Seymour, Environmental Sciences Branch from Gordon M. Dunning, Chief, Radiation Effects of Weapons Branch
http://www.hss.energy.gov/healthsafety/ihs/marshall/collection/data/ihp1d/400209e.pdf

"A resurvey of Rongelap Island should have been made prior to the return of the Rongelapese. I strongly recommended this to the Environmental Sciences Branch, but for what I am sure must have been good reasons it was not felt possible to do so."

"After the return of the Rongelapese we were surprised to learn that about ten or so of them had taken up permanent residence on Aneaetok Island to the north. Since this Island was initially more heavily contaminated than Rongelap, it was essential that we obtain data there comparable to those from Rongelap ... We still do not have the essential data on foodstuffs from Aneaetok Island..."

"As you recall, the only restriction that we placed upon the return of the Rongelapese was that they should not eat land crabs since the last survey showed an unusually high amount of Strontium-90 in their soft tissues. ... (W)hen the last survey was made (July 1957) we made a strong point of collecting land crabs ... We still had not received the data by the early part of February 1958 ... Upon further request the data were transmitted to us, based on only two land crabs collected on Rongelap Island (and incidentally the two numbers of concentration in the muscle differing by a factor of 12)."

March 1958 Medical Survey of Rongelap People Four Years After Exposure to Fallout, Robert A. Conard, M.D. et al, Brookhaven National Laboratory
http://www.hss.energy.gov/healthsafety/ihs/marshall/collection/data/ihp1b/3543_a.pdf

"These estimates showed that the body burden of Cs-137 had increased by a factor of 100 and of Sr-90 by a factor of 10 ... since the return to Rongelap." (page 33)

June 26, 1959, Letter from C.L. Dunham, M.D., Director of the Division of Biology & Medicine at the AEC to Trust Territory High Commissioner D. H. Nucker. NOTE: This three-page document cannot currently be accessed at the Department of Energy Marshall Island Document Collection website http://www.hss.energy.gov/HealthSafety/IHS/marshall/collection/

"Samples of soil, plants and animals were carefully analyzed during the period 1954 to 1957 in order to evaluate the initial and long range hazards to humans. The findings indicated a need for a more searching analysis of the retention of fallout in soil and the rate of subsequent uptake and retention in land and water plants and animals including those used as human food."

"A very unusual opportunity exists at Rongelap to study ecological relationships in a relatively undisturbed area ... The measurement of possible environmental imbalance caused by the fallout radioisotopes will contribute to estimates of long term hazards to human beings and to an evaluation of the recovery period following single nuclear detonations."

"We do not feel that we know enough about the ecological effects of fallout isotopes to state flatly that no hazards will remain when the coconut crab problem is eased. We wish to continue this program until scientists are convinced that we understand enough about the natural processes of radioactive decay and ecological redistribution to safely deny further responsibility for conditions that may appear. This is likely to be many years in view of the paucity of information on long term genetic and other effects of radiation on marine organisms."

July 10, 1959, Letter to Dr. Charles L. Dunham, Director, Division of Biology and Medicine, AEC, from Robert A. Conard, M.D., Brookhaven National Laboratory
http://www.hss.energy.gov/healthsafety/ihs/marshall/collection/data/ihp1b/3786_.pdf

"It was apparent that the Trust Territory officials do not have a grasp of the significance and importance of the medical surveys. For instance, I was surprised that Mr. Nucker (High Commissioner) did not appreciate the fact that the body burdens of the Rongelap people had increased since their return to Rongelap. They seem to take the attitude that we are merely carrying out a scientific experiment using the Rongelap people as 'guinea pigs.'"

October 1967 Proceedings of the Second Interdisciplinary Conference on Selected Effects of a General War, Volume II, Defense Atomic Support Agency, DASIAC Special Report 95 (comments attributed to Dr. Robert A. Conard, Brookhaven National Laboratory)
http://www.hss.energy.gov/healthsafety/ihs/marshall/collection/data/ihp1c/0282_a.pdf

"During the first four years the exposed women showed some increase in miscarriages and stillbirths. About 41 percent of the births during that period ended in nonviable babies compared with only 16 percent in the unexposed group." (page 118)

"We haven't carried out any specific studies of genetic effects, particularly in view of the generally negative result of the studies of Neal and Schull (Reference 17) and others in Japan. I'm sure there must be an increase in the mutant pool of these people and we have seen evidence of chromosome damage in the peripheral blood cells. We have cultured their blood and found an increase over the normal in the number of chromosomal aberrations. ... This was ten years after exposure." (page 120)

"We know that chronic low dose exposure such as this will increase to some extent the incidence of leukemia and cancer of the skin and has been seen by radiologists over the years. But we are in a region that we really know very little about in regard to human effects. (page 134)

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