

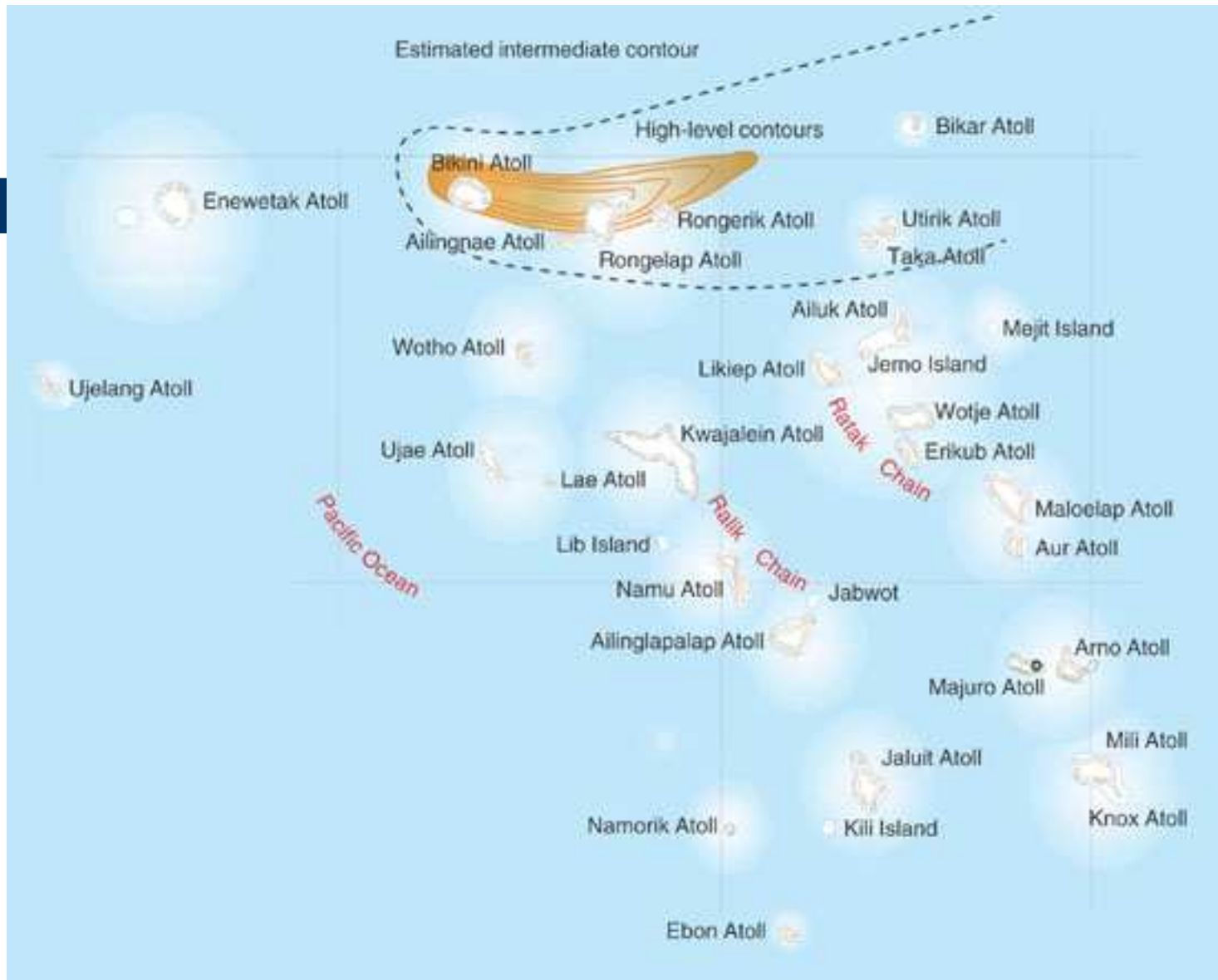
# **The Legacy of United States Testing in the Marshall Islands**

Presentation by  
Carah Ong

---

# BRAVO

- 30 June 2006 marks the 60th anniversary of start of US nuclear testing in the Marshall Islands.
- 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 1 March 1954, at Bikini atoll.
- The BRAVO shot alone was the equivalent to 1,000 Hiroshima-sized bombs.



## **Total Yield = 1.6 Hiroshima-sized bombs every day for 12 years**

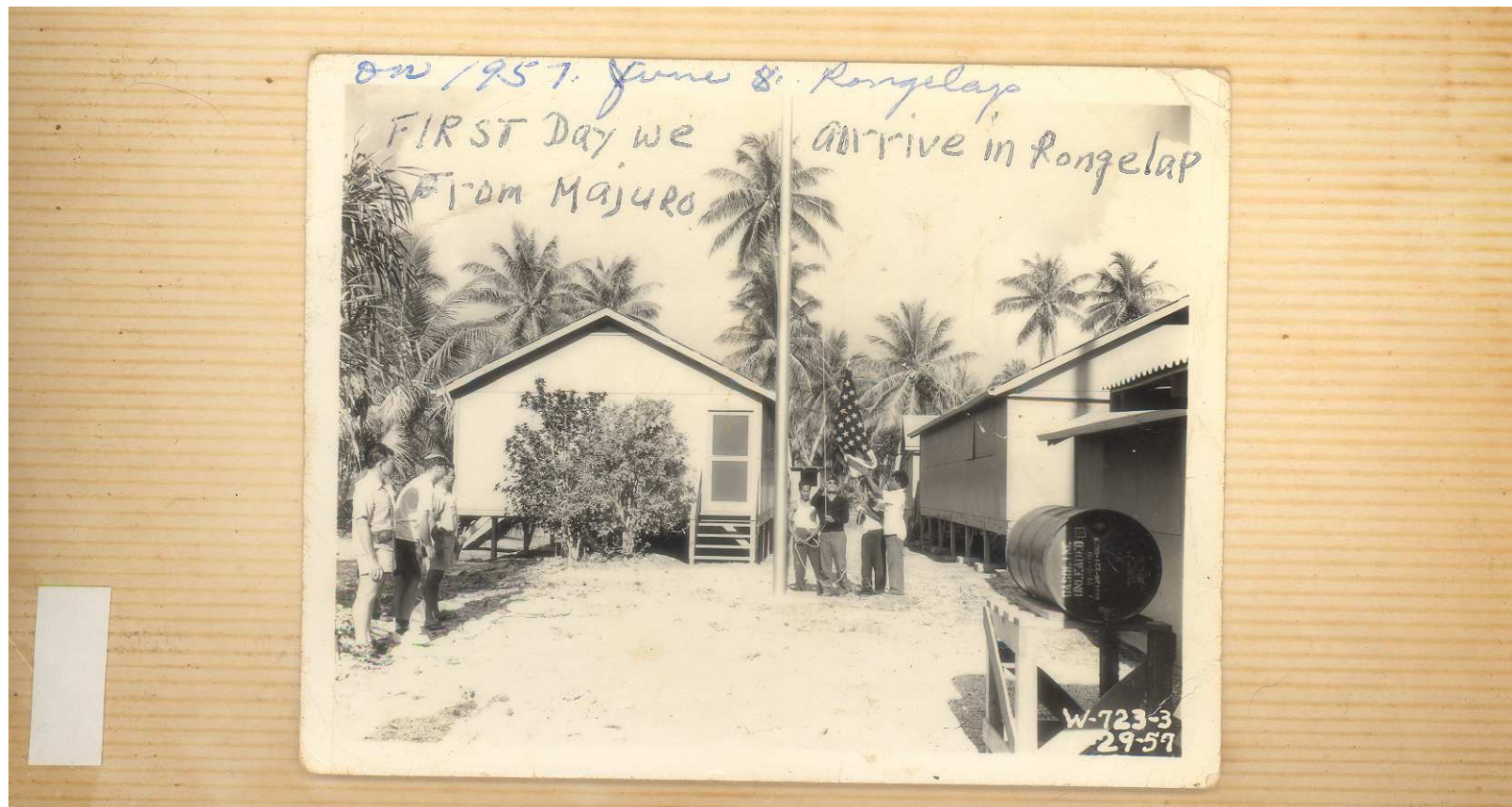
- There were 17 other tests in the Marshall Islands in the megaton range.
- The total yield of the 67 tests was 108 megatons, the equivalent yield of more than 7,000 Hiroshima bombs.
- The total yield was also 93 times the total yield of atmospheric tests conducted by the United States at the Nevada Test Site.
- The total yield of the 67 tests is the equivalent yield of 1.6 Hiroshima-sized bombs fired every day for 12 years in the Marshall Islands.

## “Jemat Jatin” “We are full of Sardines”

- After the 1954 BRAVO shot, the Rongelapese were relocated to Ejit in Majuro (where half of the Bikinians now live). In June 1957 the Rongelapese were prematurely resettled back to Rongelap. The trip should have only taken 24 hours. However, the trip took three days. For three days, the Rongelapese were fed nothing but Norwegian Oil Sardines and rice. To this day, the people of Rongelap Atoll, the inhabited island closest to the ground zero locations, remain in exile.



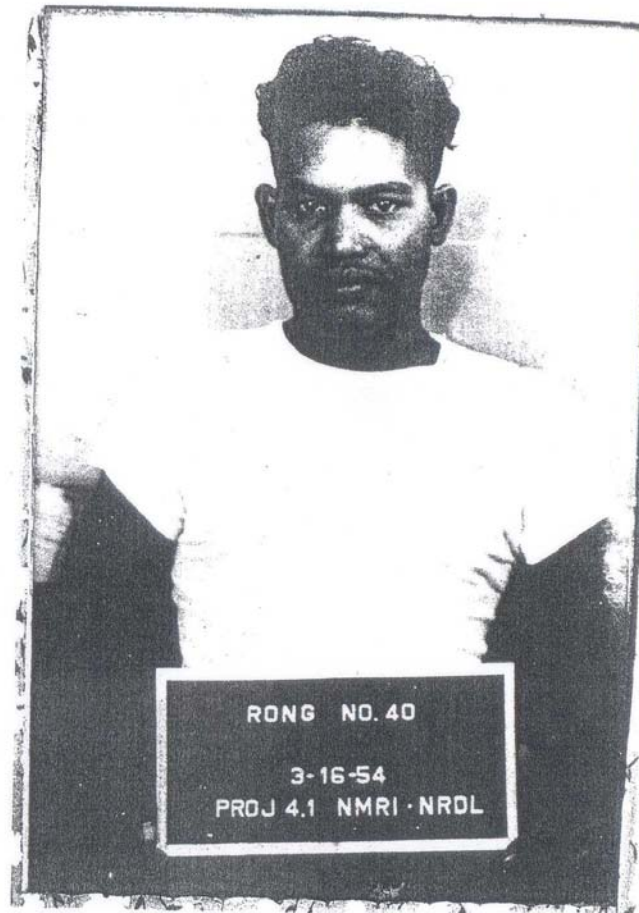
## 8 June 1957 – First Day on Rongelap



## Radiation Experiments – Project 4.1

- Following its nuclear testing program, the United States conducted radiation experiments on Marshall Islanders under the guise of a program called Project 4.1.
- From 1961-1966, physicians conducted radiation experiments utilizing the radioactive agents chromium-51 and tritium on the survivors of Bravo and the other people of Rongelap and Utirik who lived in those contaminated settings.

# Project 4.1





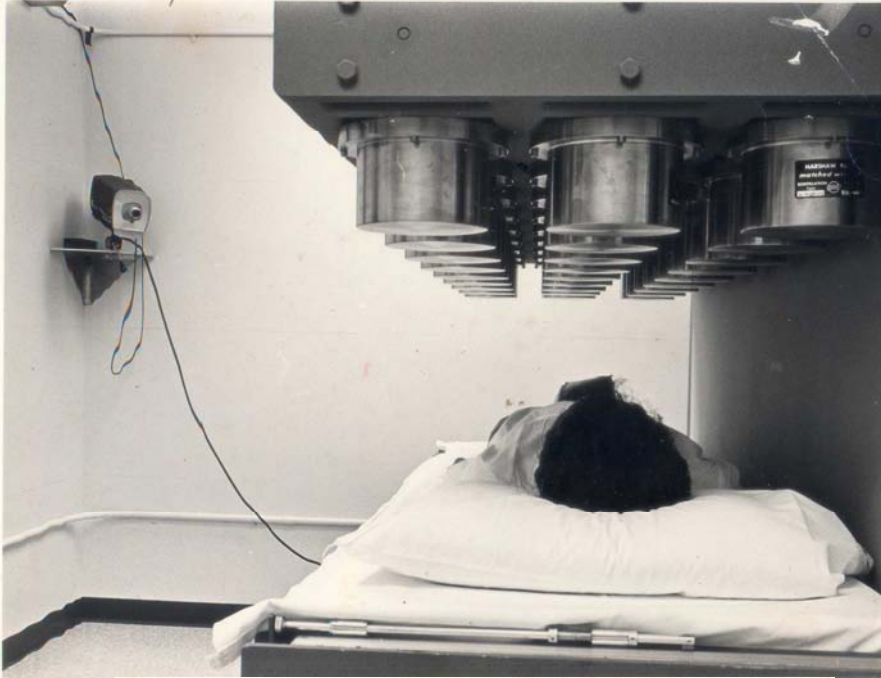
# Flagrant Disregard

- Formerly classified correspondence among the researchers, their offhand remarks preserved for posterity, had been freely available on the internet until 2004. In one letter from 1961 regarding the tritium-labeled water studies to determine total body water, Dr. Robert A. Conard, the director of medical research at Brookhaven National Laboratory, wrote, “I suppose we could try it on the unexposed people.”



# “Medical Treatment” at Brookhaven

*Leky Anjain New York 1968 Iron Room different in*



*1968*



*June 10 - 1973 New York*



*John Anjain - with his wife - Dr. L. L. ...*





# The 177 Agreement

- The 177 Agreement under the Compact of Free Association between the United States and the Marshall Islands was based on a study done by the Department of Energy called the “1978 Radiological Survey of the Northern Marshalls,” which was presented to the Marshallese as the definitive study on the full extent of damages in the Marshalls.
- Since the negotiation of the Compact of Free Association and the 177 Agreement, the United States Department of Energy has released additional information previously classified, revealing information was withheld during negotiations from Marshallese negotiators, American negotiators and Congress that would have prevented the agreement had the full extent of the damage of nuclear weapons testing been known.

# Nuclear Claims Fund

- In the 177 Agreement, the US recognized the contributions and sacrifices made by the people of the Marshall Islands in regard to the Nuclear Testing Program and accepted the responsibility for compensation owing to citizens of the Marshall Islands for loss or damage to property and person resulting from that testing.
- 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 \$270 million for distribution over a 15 year period with average annual proceeds of approximately \$18 million per year through the year 2001.

# Nuclear Claims Tribunal

- The 177 Agreement also provided for the establishment of a Claims Tribunal with 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."

# Cancers Recognized by NCT

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 not 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 pelvis, ureter and urethra	\$75,000

# Cancers Recognized by NCT

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



# Cancers Recognized by NCT

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 cancer 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
36	Autoimmune thyroiditis	\$12,500

## Personal Claims

- As of December 31, 2005, the Tribunal had awarded personal injury compensation totaling \$88,291,750 to 1,958 individuals. Only \$72,867,947 of that amount has actually been paid to the awardees or their heirs, leaving an unpaid balance of approximately \$15.4 million.

# Property Claims

- In total, the Tribunal awarded \$386 million to the Enewetak people and \$563 million to the Bikini people. In comparison, the U.S. government has allotted tens of billions of dollars to clean up contamination at sites in the United States. Unfortunately, only a small fraction of the Enewetak and Bikini compensation has been paid. The Tribunal issued 0.25% of each award in February 2002 and an additional 0.125% in February 2003. No other payments have been issued. Rongelap and Utrik are currently pending.

## Marshall Islands vs. “Downwinders”

- A comparison with the US testing in Nevada (and subsequent compensation program) reveals that despite facing much higher levels of exposure and contamination, the Marshallese have actually been compensated at a lower rate.
- In contrast to the \$72.9 million distributed to RMI victims, over \$1 billion has been granted to date by the Downwinders’ Act on behalf of 24,266 individuals.
- While explosive yields in the RMI were more than 75 times higher than in Nevada and release of radioactive iodine-131 more than 40 times higher, victims in the Marshall Islands received less than their American counterparts.

# The 177 Health Program

- The Section 177 Agreement, implemented with the Compact in 1986, provided for a \$2 million annual distribution from the Nuclear Claims Fund to fund the Four Atoll Health Care Program (also known as the “177 Health Program”) for the life of the Compact.
- Congress expanded it to provide coverage for direct *and indirect* effects of the *entire* nuclear weapons testing program in the RMI.
- The program continued to be fully funded until 2003. Since then, the program was cut to \$1 million in 2004 and Congress had to make one time appropriations for the program in 2005 and 2006.

# DOE Healthcare Program

- This program evolved out of Project 4.1. It has both an environmental clean-up component and a medical component.
- Currently, the Department of Energy medical program has one clinic serving each of the Marshall Islands major population centers (Majuro and Ebeye) and sends a doctor two to four times per year to Utrik atoll and Mejatto island (the primary settlement area for the exiled Rongelap community).
- The program has 187 enrollees that receive one comprehensive medical exam per year and treatment for any potentially radiogenic conditions, including guaranteed referrals for secondary and tertiary care to Majuro, Kwajalein, or Honolulu.

# DOE Health Care Programs

- The program is limited only to radiogenic conditions.
- The program covers only those physically present during the Bravo test, while neglecting those born later who have lived in radiologically contaminated environments.
- When the Compact went into effect, funding for these DOE programs was set at \$6.3 million as a line item within the Department of Energy budget (\$1.1 million for medical services and \$5.2 million for environmental work). This funding was removed from the budget for the 2005 fiscal year and is now wholly discretionary.

# Changed Circumstance Petition

- Under a provision in the Compact of Free Association, the Republic of the Marshall Islands filed a Changed Circumstance Petition with the United States on 11 September 2000, but it has not yet been negotiated.



# US Center for Disease Control

- In July 1998, the US Center for Disease Control 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.

# BEIR VII & NCI Reports

- In July 2005, the National Academy Sciences released the Biological Effects of Ionizing Radiation (BEIR) VII Report, reaffirming the conclusion of the 1990 BEIR V report that every exposure to radiation produces a corresponding increase in cancer risk.
- The BEIR VII report also estimates health risks from radiation to be nine times higher than the previously accepted standard announced in the BEIR I report of 1972.
- A recent report by the National Cancer Institute (NCI) estimated that among those alive in the Marshall Islands during the nuclear testing, 243 radiation-caused cancers have already occurred. However, because cancers often take decades to appear, this figure represents less than half the total number of cancers caused in the RMI by the US testing program. The report predicts almost 300 more cancers related to radiation fallout will appear in the exposed population.

# Conclusions

- Some Marshallese are still unable to return to their lands because of radioactive contamination.
- Many victims stricken with radiation-related cancers will receive partial compensation or no compensation at all because of the depletion of Nuclear Claims Funds.
- The basic treatment for nearly all radiation-related cancer victims is subject to the discretionary and at times arbitrary decisions made by government officials and foreign hospitals because the Marshall Islands lacks the facilities and expertise to treat such conditions.

# Conclusions

- The United States must extend its hands to assist the people of the Marshall Islands to extricate themselves from the legacy of the nuclear age and the burden of providing testing grounds for nuclear weapons, missiles, missile defense and radiation experiments.