

The Marshall Islands and the NPT

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Tony DeBrum, Minister of Foreign Affairs for the Republic of the Marshall Islands (RMI) provided a dose of reality to the Nuclear Non-Proliferation Treaty (NPT) Review Conference recently by asking: “How many in this room have [personally witnessed nuclear weapon detonations?](#)”

On March 1, 1954, a 9-year-old DeBrum was fishing with his grandfather near the Likiep atoll, one of the islands in the Marshalls group. As his grandfather cast his net, there was a sudden intense flash that lit up the pre-dawn sky, followed by a terrifying shock wave. “Everything turned red the ocean, the fish, the sky, and my grandfather’s net. And we were 200 miles away from ground zero. A memory that can never be erased.”

The 1954 Bravo hydrogen bomb test witnessed by DeBrum and his grandfather sparked worldwide protest against atmospheric nuclear weapons testing. Between 1946 and 1958, the Marshall Islands, then a trust territory of the United States, sustained significant damage and radiological contamination from 67 US atmospheric nuclear weapons tests. The US government exiled hundreds of Marshallese people so the Bikini and Enewetak atolls could be used to host ever more powerful nuclear weapons explosions. Residents of other islands, who were not relocated, suffered serious harm from radioactive fallout. By 1963, outrage originating with the Bravo explosion led to a global campaign that compelled the United States, the Soviet Union, and the United Kingdom to ratify the Limited Test Ban Treaty, which outlaws nuclear weapons explosions in the oceans, atmosphere, and outer space.

Now the tiny nation of the Republic of the Marshall Islands is once again at the center of international activism, filing two lawsuits, one in US federal court against the United States, and one in the International Court of Justice (ICJ) against all nine countries that possess nuclear weapons. In the ICJ action, the United States, the United Kingdom, France, Russia, China have been sued for failure to eliminate their nuclear arsenals, as called for by the NPT. The ICJ lawsuit also names India, Pakistan, North Korea, and Israel as defendants, even though they are not NPT signatories, contending they also must disarm under [customary international law](#). The lawsuits aim to enforce the NPT, arguing that the nuclear states are violating the Article VI of the Treaty, which calls for negotiations toward timely nuclear disarmament.

In February, a federal judge dismissed the United States case, ruling that it is speculative and that the Marshall Islands lack standing to bring the suit. The RMI has appealed this decision as it awaits action by the International Court of Justice.

The RMI's legal struggle to bring about nuclear disarmament dovetails with what has come to be known as the humanitarian initiative, which has gained momentum in the international community since the 2010 Non-Proliferation Treaty (NPT) Review Conference adopted language decrying “the catastrophic humanitarian consequences of any use of nuclear weapons” and calling for all states “to comply with applicable international law, including international humanitarian law.”

Between March 2013 and December 2014, three major international conferences in Oslo, Mexico City, and Vienna focused on the humanitarian effects of nuclear weapons, and on establishing a new international legal instrument that would outlaw nuclear weapons. At the Vienna conference in December 2014, the Austrian government and 68 other states put forward a document, the Vienna Pledge, that seeks to “fill the legal gap for the prohibition and elimination of nuclear weapons.”

The humanitarian initiative and the Marshall Islands lawsuits have received a chilly, some might say hostile reception from the nuclear weapons states, for an understandable reason: The nuclear weapons countries are engaged in costly modernization efforts that all but guarantee the continued existence of nuclear weapons for decades, and perhaps beyond. The Marshalls lawsuits and the humanitarian initiative both seek to make the nuclear states seriously negotiate toward nuclear disarmament.

The Marshall Islands proving ground. In March 1944, about a month after defeating the Japanese occupiers during World War II, the US government obtained the exclusive right from a local leader to indefinitely control the Marshall Islands for “the sum of ten dollars.” In January 1946, the Bikini Atoll became the site for the first nuclear weapons tests following the war. After nuclear testing ended in 1958, the Marshalls group, then a trust territory of the United States, was left with obliterated islands, huge craters, and [widespread radiological contamination](#).

The damage did not end with nuclear testing. In the 1960s, islands of the Enewetak Atoll were stripped of topsoil and used for explosive crater experiments, to see how US missile silos would hold up to enemy missiles. In October 1968, the US Navy conducted a biological warfare experiment in which Staphylococcal enterotoxin B, a virulent bacterium, was released over the Enewetak Atoll from fighter aircraft. The pathogen proved to be [harmful to experimental animals](#) over a 1,500 square mile area. Since the late 1950s, the Kwajalein Atoll and lagoon have served as an anti-ballistic missile launch site for testing against possible missile attacks. Nearly every US intercontinental ballistic missile was test fired at Kwajalein. Now home to the Ronald Reagan Ballistic Missile Defense Test Site, the \$4 billion US Air Force complex on Kwajalein is considered a key strategic asset for anti-ballistic missile testing, military space projects, and intelligence gathering.

Even though the last nuclear test was 57 years ago, radioactive contamination continues to have dominant impacts on this little nation. "What many Americans seem to want to forget," says American scholar, Sandra Crismon, "is that for the Marshallese, nuclear testing is not a historical event, as they continue to deal with the huge environmental and human health costs." Areas on which countless generations depended for their food remain off limits because of radioactive fallout and will be so for many years to come. The United States considers it too expensive to remediate these areas for human habitation. As a result, many Marshallese nuclear exiles live on the [island of Ebye](#), one of the most crowded, unsanitary areas in the world, where declarations of disease emergencies are common.

The impact of the Castle series. The most significant health and environmental impacts of US nuclear activities in the Marshalls were caused by six thermonuclear weapon tests conducted between March 1 and May 14, 1954 and known as the Castle series. Totalling some 48 megatons of explosive force, they had enormous negative impacts around the world. The first explosion, known as Bravo, produced an explosive yield of approximately 15 megatons or 1,000 times the destructive power of the Hiroshima atomic bomb. Because of its size and other factors, Bravo also spawned what the [US Radiochemical Society describes](#) as "the worst radiological disaster in US history."

From the perspective of the US military, however, the Castle test series was a great success, because it demonstrated for the first time that enormously destructive thermonuclear weapons could be deployed on bombers. At the time, Edward Teller, the prime mover in developing thermonuclear weapons, enthused over building a [10,000 megaton "gadget."](#) Teller's "gadget" would have had 8,333 times more explosive force than the B-83, the highest-yield warhead (at 1.2 megatons) in the active US nuclear stockpile.

The 15-megaton Bravo explosion pulverized and shot tens of millions of tons of radioactive coral reef upward from the Bikini Atoll into the bomb cloud, creating a 250-foot-deep crater more than a mile in diameter. The cloud top rose and peaked at 130,000 feet in the stratosphere after only six minutes. Eight minutes after the test, the cap of that mushroom cloud reached its full dimensions, with a diameter of 62 miles; its stem was more than 4 miles wide. Soon after detonation, the area of [lethal radioactive fallout would encompass 27,000 square miles](#). The [Bravo bomb cloud](#) dwarfed the radioactive releases of the Fukushima and Chernobyl accidents, containing nearly 30 times more radioactive iodine than the two reactor accidents combined.

Shortly after the test, the US military estimated that if the Bravo explosion were to have occurred in Washington, D.C., the area it blanketed with [lethal fallout](#) would have reached north to New York City.

Fallout thick as snow. About five hours after the detonation, intense radioactive fallout from the cloud was carried eastward, severely contaminating a Japanese commercial

fishing boat, *Fukuru Maru* (the Lucky Dragon), some 90 miles from the Bikini explosion, and the atolls of Rongelap, Alinginea, Rongerik, and Uterik, about 200 miles away. The people of Rongelap and Uterik suffered severe impacts, with those on Rongelap receiving radiation doses comparable to Japanese atomic bomb survivors. Fallout was so heavy that the people, who had never seen snow, thought it was snowing. Children played in the radioactive powder. "We saw a flash of lightning in the west like a second sun rising," [John Anjain, the Rongelap magistrate](#), said in 1980. "We heard a loud explosion, and within minutes the ground began to shake. A few hours later radioactive fallout began to drop on the people, into drinking water, and on the food. The children played in the colorful ash. They did not know what it was, and many erupted on their arms and faces."

About two days later, the Navy evacuated Rongelap. The next day, residents were taken off Uterik. Radiation exposures were large enough to cause tissue destruction. "Our people began to be very sick," John Anjain remembered. "They vomited, burns showed on their skin, and people's hair began to fall out."

Over the years, these residents have suffered from a high rate of thyroid disease from ingestion of radioactive iodine. In 2005, the National Cancer Institute informed the US Senate that "disproportionately higher excess cancer rates are expected to occur" among the people of [Rongelap and the atoll of Aliniginæ](#). As is now being reported among Japanese A-bomb survivors, the highly exposed Marshallese also are likely to experience [increased rates of chronic diseases](#) of the heart, lungs, bones, and digestive system. William MacBride, professor of radiation oncology at UCLA Medical School, describes the long-term impact of high-dose exposures as being "very much like aging of the immune system."

The outside world first learned of Bravo's disastrous effects two weeks after the blast, when the Lucky Dragon tuna trawler arrived at its homeport of Yaizu, Japan. The entire crew was suffering from radiation sickness. Seven months after the blast they remained in the hospital, receiving blood transfusions.

The tuna aboard the Lucky Dragon were also extremely contaminated. This, as it turned out, was not an aberration; in 1954, Japanese monitoring programs showed that 683 boats about one of every eight inspected boats had contaminated fish in their holds. The Japanese government was forced to destroy more than one million pounds of contaminated fish. At the end of September, a crew member of the "Lucky Dragon" died from acute radiation syndrome.

Worldwide impact, changing excuses. Because most of the fallout from the Castle test series was blown into the stratosphere, it circled the world, and the tests' radiological impacts were global. In July 1954, the Atomic Energy Commission's General Advisory Committee was informed that "fallout over the continents from the Castle series had been very large [and] was expected to show up in vegetation and food by Thanksgiving." Three weeks before Thanksgiving of that year, this committee met again, and the head of the AEC's Division of Biology and Medicine "[cautioned](#)

[against the use of milk](#) in heavily contaminated areas.” But no public warnings were given.

In November 1954, the AEC’s division of Biology and Medicine reported to the General Advisory Committee on [estimated radiation exposures for some 160 million Americans](#) from Castle test series fallout. Doses from consuming milk contaminated with radioactive iodine from the Castle test series in 1954 turned out to be comparable to those received from all [100 atmospheric nuclear weapons tests](#) over 12 years at the Nevada Test Site. According to the methodology developed by the National Cancer Institute in 1997, exposures from [the Castle test series could result in tens of thousands of excess thyroid cancers](#).

In May 1955, an AEC report (which subsequently remained classified for nearly four decades) estimated that about 23 million curies of radioactive fallout from the Castle series of tests raised global background radiation levels 10 to 20 times. Hot spots 5,000 miles away in the United States showed [radiation levels as much as 200 times greater than normal background](#).

Excuses pile up. For several decades, the US government officially maintained that the poisoning of Marshall Islands residents with Bravo fallout was an unfortunate accident, caused by an [unexpected shift in the winds](#). It was planned that the bomb cloud would be blown to the west and north, officials claimed, but the wind unexpectedly blew toward the east.

In 1981, this excuse was challenged by the Air Force weathermen stationed in the fallout path, who warned about a wind shift several hours before detonation. After consulting documents generated by the weathermen, the Defense Department subsequently conceded that the winds were blowing towards Rongelap and Uterik during the test countdown.

Other explanations for the disastrous dispersal of fallout from Bravo have surfaced in recent years. They include an unexpected increase in explosive power from the mixture of [lithium 6 and lithium 7](#) in the bomb's thermonuclear component. Also, because of the much greater number of fast neutrons produced by the fusion reaction triggered in Bravo, the atoms of the [depleted uranium casing \(or tamper\)](#) surrounding the bomb split, releasing even greater force and much greater amounts of fallout than had been expected. And, of course, the amount of fallout was greatly enhanced when a highly boosted weapon was [detonated on a coral reef](#), pulverizing coral and shooting it into the stratosphere.

They are more like us than the mice. In 2013, in a special report meant to address criticisms of the Bravo test, scientists from Los Alamos Laboratory pointed out that weapons planners had not miscalculated the possible yield of the weapon and had warned before the test that it could be [as large as 15 megatons](#). If this were so, the warning had no effect on evacuation plans. According to an AEC radiation safety chief, the decision not to evacuate native people was made months before the explosion

because of the "the high costs and the logistic problems presented in supporting such an operation." The authors of the 2013 Los Alamos report also concludes that Marshall Islanders living in the fallout path of the Bravo test were being manipulated by "nongovernmental special interest groups" that wanted "to panic island residents into untoward and perhaps unnecessary evacuations of inhabited atolls."

The report fails to mention that there were other reasons behind the government's desire to return native people to their contaminated homelands. One of those reasons amounted to using the Rongelap residents as radiation guinea pigs.

According to an AEC official at a January 1956 meeting of the Advisory Committee on Biology and Medicine, the area hit by the Bravo fallout "is by far the most contaminated place in the world and it would very interesting to go back and get good environmental data ... so as to get a measure of the human uptake, when people live in a contaminated environment... 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 they are [more like us than the mice.](#)"

Fear, in a handful of food. Nearly 30 years after they were returned to their homelands, the people of Rongelap fled their atoll in 1985 with the help of a Greenpeace vessel. Rongelap's leaders had repeatedly requested evacuation by the United States government after a 1978 aerial radiological survey by the US Energy Department indicated that the levels of contamination were comparable to the Bikini Atoll, where numerous nuclear weapons had been detonated. The Bikini people were re-settled to their atoll in 1969 but had to evacuate their homes again in 1978, after radiation exposures were found to be excessivelargely because the US government had failed to take into account the uptake of contamination in the local food supply. The Bikini people remain scattered throughout the Marshall Islands and elsewhere; the cleanup of their atoll remains stalled for lack of funds.

From the 1950s through the late 1980s, US nuclear weapons officials consistently opposed the establishment of radiation protection standards in the Marshall Islands, because such standards would have interfered with a possible resumption of nuclear testing in the Pacific. Despite this opposition, standards were enforced in the late 1970's after the failed Bikini resettlement effort. Some of the people of the Enwetak were successfully re-settled in 1980, after a \$100 million cleanup based on radiation exposure standards that were half what was allowed for the American public near Energy Department sites. However, there are still islands in the Enewetak Atoll that remain off limits because of radiological contamination, including a bomb crater covered with deteriorating concrete and containing 114,000 cubic feet of plutonium-contaminated waste.

The nuclear test readiness program. In 1982, the Energy Department's nuclear weapons program took control of the Marshall Islands' health and environmental efforts and, despite internal objections, eliminated radiation protection standards. The health and environmental care of the Marshall Islands became part of "Safeguard C," a nuclear

test readiness program instituted in 1963 and designed to allow resumption of US atmospheric nuclear testing in the Pacific. In a strenuous objection, the head of the Energy Department's Office of Health and the Environment wrote that the transfer of the Marshall Islands program "lend[s] credence to the claim that the U.S. is studying the Marshallese as 'guinea pigs.'"

The Energy Department made this radical change in environmental management without consulting island residents or the State Department, during the closing phase of negotiations between the United States and Marshall Islands leaders over what is known as the Compact of Free Association, which discharged the US from its role as a trustee and created the independent Republic of the Marshall Islands in 1986. Soon after the radiation standards were eliminated, researchers found that the [Rongelap people suffered a sudden and alarming increase in radiation doses](#), apparently as a result of eating local food, which the former radiation standards would not have permitted.

In 1992, after an investigation by the US Senate Committee on Governmental Affairs, Congress terminated the Energy Department's nuclear test readiness program in the Pacific. The US government also officially recognized that Rongelap was uninhabitable. As a result, the US departments of Energy and Interior entered into an agreement with the Republic of the Marshall Islands and the local Rongelap government that established radiation protection standards comparable to those for the American public as a condition for resettlement.

Following this agreement, the United States provided funds to build new housing, roads, docks, and even a small airfield on Rongelap. Efforts to convince the islanders to return fell flat in 2006, however, after an independent expert reported that the standard for radiation exposure would be exceeded, based on a local-food-only diet, if potassium fertilizer were not repeatedly applied. Rongelap remains largely uninhabited. The northern islands of the Rongelap Atoll, where most food is gathered, remain off-limits indefinitely because of radioactive cesium contamination comparable to levels in the exclusionary zone near the Chernobyl reactor. Fear and distrust remain strong.

The meaning of the Marshall Islands lawsuits. [Foreign Minister DeBrum](#) tossed some needed cold water on the often-abstract discourse at the recent NPT Review Conference by pointing out that the people of the Marshall Islands had their homeland, culture, and health sacrificed, so the United States could amass a nuclear arsenal.

Through its lawsuits, the Republic of the Marshall Islands has exposed a huge loophole, carved out by the original five recognized nuclear weapons states at the Non-Proliferation Treaty's inception during the Cold War. Article VI requires the nuclear weapons states to engage in good-faith negotiation on disarmament, but does not actually require disarmament or set a timeline on which it should occur. By seeking a binding legal requirement for weapons states to engage in nuclear disarmament, the Marshall Islands and numerous nations are hoping to plug this loophole, which undermines the NPT.

During the NPT Review Conference just concluded, the United States tried to divert the focus of the participants from efforts by the nuclear weapons countries to indefinitely preserve and improve their nuclear weapons stockpiles. Instead of reaffirming a commitment under the treaty's Article VI to seek disarmament, the United States declared that it will not "pursue new nuclear warheads, and [nuclear warhead] life-extension programs will not provide new military capabilities." At the same time, the US government is planning to spend more than \$1 trillion on weapons-production infrastructure, ballistic missiles, submarines, and bombers over the next 30 years. Beyond that, the United States has short-circuited the process for dismantling nuclear warheads retired under New START until the country's crumbling nuclear weapons research, development, and production complex is restored sometime in the 2030s. All of these efforts create at least the appearance that the United States and Russia and the other nuclear countries, which are involved in their own nuclear modernization projects-intends to avoid disarmament indefinitely.

Land mines are banned by international convention because they have proven to be "excessively injurious" weapons that are indiscriminate and grossly violate international humanitarian law on the conduct of war. There's little doubt that nuclear weapons are far more excessive and indiscriminate in the injuries they cause. Marshallese Foreign Minister DeBrum makes a strong case that nuclear weapons development, in and of itself, violates basic humanitarian principles and therefore fits the criteria for banning. DeBrum and the Marshallese people are far from alone in arguing for an outright nuclear weapons ban; support is building worldwide for nuclear weapons to be recognized under binding international law as unacceptable instruments of war that belong in the dustbin of history.