

DAY ONE PROJECT

Reforming Nuclear Research Practices in the Marshall Islands

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Summary

In the mid-20th century, the United States test-detonated dozens of nuclear weapons in the Republic of the Marshall Islands (RMI). Using the RMI as a test site for nuclear-weapons research allowed the U.S. to better understand the effects of such weapons and their destructive capacities — but at significant cost. Conducting nuclear tests in the vulnerable RMI harmed human health, fomented distrust in research sponsored by the U.S. government, and fueled tensions with the Marshallese. Fallout from the tests undermined U.S. influence in the Pacific, cooperation over ecological restoration, and the reputation of the U.S. research enterprise. Building back relations with the RMI (and other allies that have long supported the United States) is crucial for enabling the Biden Administration to undo the adverse effects of Trump-era policies on international relations and the environment, especially amid rising threats from China and Russia.

To that end, the Department of Energy (DOE) and Department of Interior (DOI) should adopt provisions for conducting nuclear research with and in the Marshall Islands that will: (i) increase transparency and trust in American research concerning the Marshall Islands, and (ii) elevate Marshallese voices in the fight for preservation of their lands. These provisions are as follows:

1. All collected data should be translated into Marshallese and shared with RMI officials and relevant stakeholders.
2. When appropriate (e.g., when security and privacy considerations permit), collected data should be published in an easy-to-access online format for public consumption.
3. All research should be clearly laid out and submitted to the RMI National Nuclear Commission (NNC) in accordance with the NNC's Nuclear Research Protocol.¹
4. The United States should coordinate with the NNC, the College of the Marshall Islands (CMI) Nuclear Institute, regional agencies, and other relevant nongovernmental organizations and local stakeholders to ensure that local knowledge is considered in the design of nuclear-related research and data projects.
5. All possible steps should be taken to include the participation of Marshallese residents in research ventures and operations.

¹ Republic of the Marshall Islands National Nuclear Commission. (n.d.). [Ethics Protocol for Researchers and Study Abroad Instructors](#).

Challenge and Opportunity

Between 1946 and 1958, the United States detonated 67 nuclear weapons in the Republic of the Marshall Islands (RMI), a series of small islands or “atolls” in the Pacific Ocean located approximately midway between Hawaii and the Philippines. The United States had administrative capacities over the RMI after the RMI was seized from the Japanese and put under the United Nations Trust Territory of the Pacific Islands. The RMI became an independent nation with the exit of the in 1979. But prior to leaving, the United States stored [3.1 million](#) cubic feet of radioactive soil and debris in the “Runit Dome” on Enewetak Atoll, adding to this mass the waste from a dozen biological weapons tests and 130 tons of soil from an irradiated Nevada testing site.²

The nuclear tests and storage of nuclear waste helped advance American nuclear technology. But these actions also had catastrophic impacts for the Marshallese people and their land. The cleanup mission and creation of the Runit Dome alone exposed countless American veterans, civilians, and Marshallese citizens to high levels of radiation and toxic material. Today, the Marshallese people suffer from devastating rates of radiation-caused thyroid disease, leukemia, and other illnesses. Studies estimate that on average, 55% of the cancers that have occurred in the RMI population since the 1950s are attributable to radiation from nuclear fallout. This number rises to a breathtaking 95% for individuals with thyroid cancer on Rongelap Atoll.³ The presence of radioactive fallout has also deteriorated many of the RMI’s natural ecosystems.⁴

Compounding these issues is the unwillingness of the U.S. government to be open and transparent around the impacts of U.S. nuclear research on the RMI. For example, the June 2020 Department of Energy (DOE) *Report on the Status of the Runit Dome in the Marshall Islands*⁵ includes a list of “References and Suggested Reading” but does not include most of the raw and original data and studies relevant to the Runit Dome. Those interested in exploring original data concerning the Dome must directly request that data from DOE. Lack of clarity around this requesting process increases distrust in information that is ultimately provided and makes it seem as if the DOE is purposely hiding information. H.R. 2780 — the Insular Area Climate Change Act is a recent bill that directs the Department of the Interior (DOI) to prepare a report on the impacts of climate change on the Runit Dome and directs funding towards ongoing monitoring of the site.⁶ However, the bill does not direct DOI to release raw data or provide layman’s interpretations of collected data relevant to the Runit Dome.

Opacity around research concerning the RMI is not a new phenomenon and this opacity has historically caused significant harm to Marshallese residents. A glaring example of this harm was perpetrated by the DOE from 1954 to 1992 via its classified

² Rust, S. (2019). [How the U.S. betrayed the Marshall Islands, kindling the next nuclear disaster](#). *Los Angeles Times*, November 10.

³ Land, C.E. (2010). Projected lifetime cancer risks from exposure to regional radioactive fallout in the Marshall Islands. *Health Physics*, 99(2): 201–215.

⁴ Comprehensive Nuclear-Test-Ban Treaty Organization. (n.d.). [The United States' Nuclear Testing Programme](#).

⁵ U.S. Department of Energy. (2020). *Report on the Status of the Runit Dome in the Marshall Islands*. Report to Congress.

⁶ Text - H.R.2780 - 117th Congress (2021-2022): [Insular Area Climate Change Act](#). (2021, July 14).

“Project 4.1.”⁷ After their island was overwhelmed by nuclear tests, the people of Rongelap Atoll were evacuated to a highly contaminated island where, without their knowledge or consent, they were submitted to a study concerning the effects of consuming radioactive food for almost 30 years. The exposure to radiation resulted in numerous health consequences, including stillborn births and other defects, high cancer rates, and thyroid disease.

Sadly, the RMI is one of multiple nations where secret American research has had disastrous effects. There are three ways that failure to provide remedies and rebuild trust with these nations can harm the United States in turn.

First, distrust in affected nations concerning U.S. research may impact how other global governments and populations view American research. The American research enterprise is one of the world’s strongest. But if other policymakers and scientists take issue with how the enterprise operates, then the research it produces will be far less impactful.

Second, distrust in U.S. research reduces U.S. influence in geopolitically important areas. China has already begun attempting to exert its influence in the Pacific by “providing aid and loans to dozens of nations, [and thereby] surpassing the United States as the region’s largest trade partner.”⁸ Distrust in U.S. research may further encourage nations such as the RMI — a key strategic stronghold in the Pacific — to default to Chinese aid.

Third, distrust between the RMI and the U.S. may diminish cooperation over approaches to climate change. The ecological consequences of leakage from the Runit Dome or uncontained radioactive waste in the RMI have cascading impacts on regional ecosystems and the health of Marshallese residents. Radioactive soil leaking into the ocean ecosystem can raise temperatures of surrounding waters and cause coral bleaching and die-off, harming animal and plant populations and contributing to broader ocean acidification and flooding due to sea-level rise. As President Biden emphasized in his Executive Order on Tackling the Climate Crisis at Home and Abroad,⁹ allies such as the RMI will be vital in the fight against climate change. But if Marshallese organizations do not trust American research, they may be unwilling to cooperate with American partners on meaningfully addressing climate change.

Plan of Action

To rebuild trust and strengthen relations with the RMI — and to set a precedent for doing the same with other historic allies of the United States — the DOE and DOI should adopt the provisions outlined below when conducting research into the consequences of U.S. nuclear testing in the Marshall Islands. These provisions, inspired

⁷ Johnston, B.R.; Abraham, B.T. (2016). [Environmental Disaster and Resilience: The Marshall Islands Experience](#). *Cultural Survival Quarterly*, September.

⁸ Rust, S. (2019). How the U.S. betrayed the Marshall Islands.

⁹ The White House. (2021). [Executive Order on Tackling the Climate Crisis at Home and Abroad](#). January 27.

by recommendations outlined by the RMI National Nuclear Commission (NNC),¹⁰ will collectively (i) increase transparency and trust in American research concerning the Marshall Islands, and (ii) elevate Marshallese voices in the fight for preservation of their lands. Implementing the protocols outlined below will cost only a fraction of the hundreds of millions of dollars that the United States has spent on research in the RMI.¹¹ The return on this relatively small investment will come in the form of a better international reputation for the United States, improved strategic relations with the RMI, and more effective research and environmental collaborations.

Increase transparency and trust in American research concerning the Marshall Islands.

Provision 1. All collected data should be translated into Marshallese and shared with RMI officials and relevant stakeholders. The NNC understanding is that “any physical specimens or interviews collected during research belong to landowners and community members where [the researching nation] propose[s] to conduct research.”¹² Accordingly, the United States should share with appropriate entities — including the RMI Embassy in Washington, DC and the Marshallese government (including the NNC) — all raw data collected in the RMI, as well as data-based products (e.g., publications). Such sharing could occur via weekly or monthly research reports. Data and data-based products should be translated into Marshallese prior to sharing.

Provision 2. When appropriate (e.g., when security and privacy considerations permit), collected data should be published in an easy-to-access online format for public consumption. The International Atomic Energy Agency (IAEA) argues that transparency around nuclear facilities and activities is valuable because it promotes accountability and increase stakeholder confidence “that their views will be properly taken into account...and enhances their confidence in the regulatory body itself.”¹³ A study focused on the 2011 Fukushima nuclear-power plant disaster found that the rate of favoring nuclear energy was less likely to decline when governments were transparent about the disaster. Releasing as much data related to nuclear research in the RMI as possible to the public will help shift public perception of the United States as an aggressor towards perception of the United States as an accommodating partner in the efforts to restore the RMI’s natural resources and to protect people and the environment alike from further nuclear-related harm.

Elevate Marshallese voices in the fight for preservation of their lands

Provision 3. All research should be clearly laid out and submitted to the RMI National Nuclear Commission (NNC) in accordance with the NNC’s Nuclear Research Protocol. Building trust with the RMI will require respecting their

¹⁰ Republic of the Marshall Islands National Nuclear Commission. (n.d.). Ethics Protocol for Researchers and Study Abroad Instructors.

¹¹ Lum, T.; et al. (2005). *Republic of the Marshall Islands Changed Circumstances Petition to Congress*. Congressional Research Service, May 16. RL32811.

¹² Republic of the Marshall Islands National Nuclear Commission. (n.d.). Ethics Protocol for Researchers and Study Abroad Instructors.

¹³ International Atomic Energy Agency. (2017). [Communication and Consultation with Interested Parties by the Regulatory Body](#). General Safety Guide, No. GSG-6.

sovereignty and protocols for conducting research on their lands. Accordingly, the United States should write up all planned nuclear research and submit the write-ups to the NNC for review prior to initiating any nuclear-research activity. Write-ups should document (i) local permission for all planned activities, including plans for data transfer, storage, and privacy, and (ii) an ethics analysis that addresses the eight areas defined by the NNC's Nuclear Research Protocol.

Provision 4. The United States should coordinate with the NNC, the College of the Marshall Islands (CMI) Nuclear Institute, regional agencies, and other relevant nongovernmental organizations and local stakeholders to ensure that local knowledge is considered in the design of nuclear-related research and data projects. Working with a diverse range of stakeholders is essential for building trust with the RMI while promoting public awareness of and participation in nuclear research. Involving stakeholders early on provides benefits such as increasing the chance that a collaborative solution will be embraced early in a nuclear-remediation process.¹⁴ The United States should host a biannual meeting that convenes DOE and DOE research representatives, representatives of key stakeholder groups including the NNC Independent Scientific Advisory Panel and the RMI Embassy in Washington, DC, and other RMI nuclear experts and government officials. The United States should also host quarterly open-door conferences for the local population in the RMI. These conferences will help break down barriers between the American research complex and Marshallese residents, enabling both sides to exchange expertise and find common ground.

Provision 5. All possible steps should be taken to include the participation of Marshallese residents in research ventures and operations. Research on the RMI and the consequences of nuclear fallout on the RMI advances the careers, capacity, and knowledge of American researchers. This research should also enhance Marshallese understanding of their land and facilitate long-term connections between Americans and Marshallese residents. Whenever possible, the United States should hire Marshallese residents to serve as cultural liaisons, translators, and guides. American scientists should also identify opportunities to engage young Marshallese residents in research and educational opportunities. Finally, the United States should appoint a Marshallese resident as a paid, full-time "Community Concern Advocate" responsible for (i) ensuring strong communication with Marshallese affected by nuclear research populations, and (ii) promoting inclusive and ethical research practices.

Conclusion

The Biden Administration has committed to centering alliances at the heart of its foreign policy and to prioritizing strong environmental initiatives. One way for the administration to make progress on both goals is to rethink how the U.S. government conducts nuclear research in allied nations such as the Republic of the Marshall Islands. Not only does the United States have a moral imperative to ameliorate the incredible harm that American nuclear testing in the RMI has caused to the health of

¹⁴ Ibid.

Marshallese residents and the integrity of Marshallese natural ecosystems—it also has a strategic interest in shoring up Marshallese relations given the crucial geopolitical and national-security importance of the RMI in the Pacific. Improving U.S. practices for conducting nuclear research in the RMI is an easy way to begin to remedy past harms, avoid future harms, and strengthen the Marshallese alliance. If adopted, the provisions outlined in this memo will serve as a model for U.S.-led nuclear research in other territories and nations, and will display to hesitant allies across the globe that the U.S. research enterprise is a partner, not a subjugator.

Frequently Asked Questions

1. What mechanisms will ensure that U.S. government researchers adhere to the provisions outlined in this memo?

DOE and DOI should use a combination of “push” and “pull” incentives to motivate compliance with provisions presented herein. For instance, the agencies could make research funding contingent on compliance. The agencies could also incentivize transparency, data sharing, and community collaboration by providing additional funding and resources for successful ventures.

2. How much will it cost to comply with the data-reporting standards and community-collaboration requirements outlined in this memo? How will these costs be funded?

From 1954–2004, the United States spent more than \$500 million on RMI-related research, compensation, and assistance — including health care, environmental monitoring, island cleanup, and resettlement. After nuclear-remediation funds were closed or ran out in the mid-2000s, U.S. spending related to nuclear research in the RMI has shifted primarily to research funding. Re-allocating just a small fraction of this research funding to cover data sharing, translation of research into Marshallese, and efforts to strengthen community collaboration will deliver considerable returns in the form of a better international reputation for the United States, improved strategic relations with the RMI, and more effective research and environmental collaborations.

3. Are the provisions outlined in this memo strong enough? Will they ensure meaningful remediation for past actions and meaningful improvement of future research activities?

It is critical that U.S.-led remediation efforts not violate Marshallese sovereignty or autonomy. Accordingly, the provisions outlined in this memo are based on requests and recommendations from the RMI NNC, in both their Nuclear Research Protocol and their Strategy for Justice report.¹⁵ Both of these documents emphasize the importance of Marshallese knowledge-building, transparent research, and community collaboration. That said, reforming U.S. research practices is likely not enough to compensate for the harms inflicted by U.S. nuclear research in the RMI. Options for providing additional remediation funding and resources should be

¹⁵ Marshall Islands National Nuclear Commission. (2019). [Nuclear Justice for the Marshall Islands](#).

evaluated by appropriate U.S. policymakers in close collaboration with RMI officials and representatives.

4. Will better research transparency lead to better outcomes?

Yes. Making data available and research methods transparent is a proven way to hold researchers accountable and enable external readers to independently decide whether they agree with the researchers' conclusions. Essentially, improved transparency serves as an external check on research ethics that in turn motivates better outcomes.

5. Provision 4 emphasizes the importance of U.S. partnerships with key RMI stakeholders. Where do such partnerships stand now and what is needed to strengthen them?

Existing collaborations between the United States and RMI stakeholders are ad-hoc and conducted as deemed “necessary”. While researchers sometimes host informal panels or meetings with Marshallese researchers and residents, and while the NNC has served as a conduit between the U.S. government and domestic Marshallese NGOs there is no framework for consistent engagement or ongoing collaboration between U.S. and Marshallese stakeholders. The United States will need to work with the RMI government to develop such a framework and determine stakeholders to be included.

6. Should all data related to U.S. nuclear research in the RMI be shared?

Though the IAEA acknowledges that “some sensitive information cannot be disclosed (e.g. information concerning nuclear security, proprietary information),” it also emphasizes that “any restriction on information should be kept to a minimum and fully justified on the basis of national legislative criteria.”¹⁶ The DOE and DOI should hold to the IAEA’s standards when determining which material to release publicly. Material deemed acceptable for public release should be translated into Marshallese and summarized in language easily understandable by non-expert but interested members of the public. Sensitive materials that cannot be publicly released should be shared with the RMI government should they concern the RMI’s safety and/or security.

¹⁶ International Atomic Energy Agency. (2017). Communication and Consultation.

About the Author



Rujuta Pandit is a member of the Class of 2024 at Dartmouth College and studies Engineering Sciences, Public Policy, and International Studies. At Dartmouth, Rujuta is a War and Peace Fellow at the John Sloan Dickey Center for International Understanding, a consultant for the Dartmouth student Consulting Group, and a staff writer for World Outlook, Dartmouth's Undergraduate Journal of International Affairs. As a Nelson A. Rockefeller Center for Public Policy First-Year Fellow, Rujuta interned at the Federation of American Scientists: Day One Project in Summer 2021. After graduation, Rujuta hopes to pursue a career in science and technology policy and national security; she is particularly interested in Science Diplomacy as a method for conflict resolution.

About the Day One Project



The Federation of American Scientists' Day One Project is dedicated to democratizing the policymaking process by working with new and expert voices across the science and technology community, helping to develop actionable policies that can improve the lives of all Americans. For more about the Day One Project, visit dayoneproject.org.

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