

Questions for the Record
Oversight Hearing titled, “*Runit Dome and the U.S Nuclear Legacy in the Marshall Islands*”

Mr. Matthew Moury, Associate Under Secretary for
Environment, Health, Safety, and Security, U.S. Department of Energy

QUESTIONS FROM CHAIRPERSON KATIE PORTER

- Q1. Do you believe the United States should make a formal apology to the people of the Marshall Islands?
- A1. The Department of Energy (DOE) respectfully defers that question to the Department of State (DOS) to provide a formal response for the Administration.
- Q2. In a letter from the DOE to the Republic of the Marshall Islands (RMI), dated May 14, 2021, the Deputy Associate Under Secretary for the Office of Environment, Health, Safety, and Security asserted that the Secretary of Energy asked him to write on her behalf. In that letter, the DOE claimed that the U.S. position regarding the bilateral agreements with the RMI remained unchanged. In your testimony, you stated that you are “responsible for overseeing health and environmental activities conducted on behalf of DOE in and for the Republic of the Marshall Islands (RMI) and its inhabitants.” Why did this letter come from your deputy and not from you?
- Q2a. Per your commitment during testimony, please provide all correspondence related to the creation of this letter.
- A2a. I have overall responsibility for this program, but delegate authority to the capable senior leaders in my organization and concurred on the response. At the time that this letter was prepared, the position of the Director of the Office of Health and Safety was occupied by an acting designee. The Deputy Associate Under Secretary signed this letter as the next higher level official to whom the Director reports, responsible for the Marshall Islands program office.
- Q3. How much money has DOE requested from the Department of the Interior for groundwater monitoring at Runit Dome since the enactment of the Insular Areas Act of 2011? How much of this funding has been provided to date? How much funding would DOE require to comply fully with the law?
- A3. To date, DOE has requested, and the Department of Interior (DOI) has transferred to DOE \$2,119,400 as initial funding to develop a project plan, collect samples, and install additional monitoring wells. DOE is currently in discussions with the Army Corps of Engineers to determine their capabilities to support the monitoring project and assist DOE in providing an updated cost estimate.

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- Q4. In your testimony, you stated that “Pursuant to the terms of the Compact of Free Association, the Republic of the Marshall Islands bears full responsibility for maintaining and monitoring the [Runit] dome and Runit Island.” Where specifically in the Compact of Free Association is full responsibility for maintaining and monitoring Runit Dome transferred to the RMI?
- A4. The Department of State (DOS) advises DOE regarding claims, settlements, and responsibilities found in the terms of the Compact of Free Association. For a fuller explanation of the U.S. Government’s position, we defer to the DOS.
- Q5. In your written testimony, you stated that “There are four (4) northern ‘nuclear affected atolls’ included in the DOE Marshall Islands Program — Bikini, Enewetak, Rongelap, and Utrik.”
- Q5a. In contemporary U.S. government documents, the chief radiation monitoring officer for the Bravo test states that “Balancing the effort required to move the 400 inhabitants against the fact that such a [20 roentgen] dose would not be a medical problem it was decided not to evacuate [Ailuk] atoll.” Was this decision consistent with current standards for radiation exposure?
- A5a. The statement from the referenced U.S. Government documents is not consistent with current U.S. and international standards related to exposure guidelines for public health protection.
- Q5b. U.S. Atomic Energy Commission documents regarding “Atolls Contaminated by Fallout” list Alinginae, Ailuk, Bikar, Likiep, Rongelap, Rongerik, Taka, Utrik [sic], Wotho, Jemo, and Mejit as “Atolls Impacted” by the Bravo test. Does DOE believe that the four northern atolls in the DOE Marshall Islands Program are the only “nuclear affected atolls?”
- A5b. Decisions regarding the locations previously identified as “nuclear affected atolls” were not made by DOE and are currently outside of DOE’s purview.
- Q6. In your written testimony, you stated that “the inhabitants of Rongelap and Utrik atolls were not relocated prior to the 1954 Castle Bravo weapons test and, due to shifting wind patterns, were exposed to local fallout from the [Bravo test].” Contemporary U.S. government documents state that before the Bravo test “the wind patterns (forecast and actual) were favorable but the trend... was toward an unfavorable or marginal condition.” Additionally, the Bravo test was two and a half times more powerful than expected. Does “shifting wind patterns” constitute a complete and accurate explanation of why fallout from the Bravo test harmed the inhabitants of Rongelap and Utrik atolls?
- A6. My written testimony (which was also presented orally) was edited for brevity to fit into the five-minute

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time allotted by the Committee. Other factors, such as the unexpected over yield of the tested device, stratospheric contributions, surface conditions, and inaccurate assumptions have also been offered as contributing factors that led to the movement of fallout outside of the planned operational area. Additional information is available in <https://apps.dtic.mil/sti/citations/ADA572278>.

- Q7. In your written testimony, you stated that residents of Bikini were evacuated and not exposed to fallout as a result of the Bravo Test. However, DOE documents indicate that after the U.S. resettled Bikinians on their home islands in the 1970’s, Bikinians absorbed more of certain radionuclides than any known population. According to a LLNL report at the time, they were “possibly the best available source of data for evaluating the transfer of plutonium across the gut wall after being incorporated into biological systems.” How do you reconcile that with your description of the radiation exposure suffered by the people of Bikini?
- A7. A decision to relocate the resettled population on Bikini in 1978 was based on medical examinations that revealed that many people living on the atoll had acquired levels of fission products (e.g., cesium-137) that exceeded federal radiation guidelines at the time. The population of Bikini was evacuated prior to the Bravo test and thus residents were not directly exposed to fallout from the test. Nevertheless, the Bravo test did make a significant contribution to the total fallout deposit on Bikini Island.
- Q8. Pursuant to Public Laws 95–134, 96–205 and 108-188, DOE shall provide “an integrated, comprehensive health care program including primary, secondary, and tertiary care with special emphasis upon the biological emphasis of ionizing radiation.” However, DOE does not provide medical care and screening for all cancers, nor for non-cancerous conditions potentially linked to radiation exposure, such as cataracts, myocardial infarction in females, increases in stroke, digestive, and respiratory disease, or increased heart and circulatory disease. DOE also does not provide care for people who were prematurely resettled on their home islands after Bravo when radiation levels were high nor second and third generation family members born and raised in these contaminated islands. DOE also does not provide care or screening for potential secondary health impacts of exposures, such as conditions connected to suppression of the immune system, mental health, or dietary issues. How is DOE’s health care program meeting the statutory mandate for a “comprehensive health care program including primary, secondary, and tertiary care?”
- A8. DOE works in concert with the DOI’s 177 health care program (177 program), which also has a radiological healthcare mandate, to provide comprehensive health care for the designated populations. The DOE Special Medical Care and Logistics program is primarily focused on the detection and treatment of cancers, but also incorporates annual physicals, including laboratory tests and diagnostic procedures

Questions for the Record
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such as thyroid ultrasounds, mammograms, and chest x-rays or imaging. Patients are referred to medical centers in the United States for evaluation of findings of concern. Although DOE provides initial basic treatment and support for other medical conditions identified during an examination, patients are referred to the 177 program for fuller evaluation and treatment in those cases.

- Q9. In your testimony, you claimed that DOE worked in “close coordination” with the RMI government to establish groundwater monitoring. In 2019 the RMI adopted a research protocol for research related to the nuclear legacy requiring community permissions and participation that DOE contractors routinely circumvent. In fact, The Ministry of Foreign Affairs & Trade (MOFAT), the National Nuclear Commission (NNC), and often the U.S.Embassy in Majuro are not aware when Dr. Hamilton and his LLNL team are in the RMI.Despite repeated requests by MOFAT and the NNC, Dr. Hamilton does not provide information about his scheduled visits ahead of time nor permission to extract and take samples out of the country. On more than one occasion Dr. Hamilton has had coolers of samples ready to take to the U.S. without community permission, participation, or awareness. Were you aware of these concerns, and if so, why did you characterize the DOE as working in close coordination with the RMI?
- A9. Due to travel restrictions imposed by the Republic of the Marshall Islands (RMI) government, Dr. Hamilton has not been to the Marshall Islands since 2019, when the referenced RMI research protocol was adopted. Local Marshallese workers have continued to conduct some work under remote guidance, but it has been DOE’s plan and direction to ensure that any work done is coordinated with local authorities, as per the protocol. If there have been instances where this has not occurred, then we regret the oversight. We have directed DOE contractor personnel supporting the Marshall Islands program to adhere to the coordination protocols. In anticipation of being able to resume travel and work in 2022, it is the Department’s intention to ensure full compliance with the RMI research protocol for all future work.
- Q10. In your testimony, you stated that the “The main risk posed by the dome will be derived from the flow of contaminated groundwater from beneath the containment structure into the local marine environment.” A 1981 Defense Nuclear Agency report on the cleanup of Enewetak Atoll states that “EPA pointed out that the amount of plutonium which had already been deposited in the lagoon and was circulating in its waters was probably much greater than any that might leak from the crater. In fact, there was a far greater amount of fallout in the lagoon than there was left on the islands to be cleaned up.” Does DOE agree with the EPA’s assessment? If not, why not?
- A10. Yes. A similar assessment is referenced in the DOE “Report on the Status of the Runit Dome in the Marshall Islands,” submitted to Congress in June of 2020.

Questions for the Record
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QUESTIONS FROM REPRESENTATIVE ED CASE

Q1. Given the Department of Energy’s statements in recent testimony and the 2020 “Report on the Status of the Runit Dome in the Marshall Islands,” what are the logistical, procedural, and funding challenges that the Department faces in implementing the groundwater radiochemical analysis program as required by the *Insular Areas Act of 2021* (to include any international travel restrictions or COVID-19 safety protocols)? Additionally, what would be required to accelerate the implementation of the groundwater radiochemical analysis program?

A1. Efforts to continue the groundwater monitoring program and install additional groundwater monitoring wells are challenged by distance and logistics; restrictions on the movement of personnel and equipment imposed by the RMI government due to COVID-19; and ensuring that all processes associated with working in a radioactively contaminated environment, including waste management, are properly vetted and approved by applicable authorities in both the RMI and the U.S.

We have been focused on finding a drilling contractor capable of supporting this project, given the nature of the work, and time and distance involved.

Other considerations include:

- management of radioactive waste generated during the project, including the transportation and storage of materials;
- acquiring necessary permits (from the RMI and U.S. authorities);
- providing shelter/support for drilling and logistical personnel during drilling operations (to protect personnel from extreme heat exposure);
- scheduling boat/vessel charters within the RMI;
- shipment of drilling equipment and tooling, supplies;
- identifying and engaging support personnel (example: Marshallese workers);
- identifying containment processes during operations;
- the decontamination and disposition of equipment; and
- the shipment and testing of samples.

Questions for the Record
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Considering these challenges and the difficulties encountered in engaging a contractor, we are currently discussing options with the Army Corps of Engineers for their involvement in scoping, assessing, and managing aspects of the project to speed its completion.

Questions for the Record
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QUESTIONS FROM REPRESENTATIVE GREGORIO SABLAN

- Q1. The Department of Energy has hired people from the Marshall Islands as well as outside contractors to assist with efforts to contain radiation in the Marshall Islands. In the U.S., DOE contractors who are exposed to radiation are eligible to access healthcare and receive compensation. I understand that Marshallese and other non-US citizens are ineligible to receive DOE support for work exposing them to radiation because they are not US citizens. Is this true? Is it also true that U.S. military personnel involved in cleanup activities in the Marshall Islands are not receiving adequate support for their exposures to radiation because U.S. laws of “Atomic Veterans” include only people who were present during the detonations, and not those involved in cleanup activities? It seems we have a problem in the presumption that exposure only occurs during detonations. This is a problem for Marshallese born after the testing program and for cleanup workers. Is this failure to include people exposed to radiation after the detonations a topic that the U.S. should be open to discussing with the Marshall Islands?
- A1. This matter is outside DOE’s purview. Questions related to medical care for US military personnel can be addressed by the Department of Defense, and questions regarding non-US citizens can be addressed by the Department of State.
- Q2. You state that, “radiation dose rates to individuals on Enewetak from internal exposure to fallout radionuclides are well below international standards for radiological protection of the public.” How do the radiation rates compare with U.S. EPA guidelines for radiation rates? President Truman’s pledged to the U.N. Security Council that, “The Enewetakese will be accorded all rights which are the normal constitutional rights of the citizens under the Constitution . . . as wards of the United States for whom this country has special responsibilities”? Wouldn’t this commitment require that U.S. radiation exposure standards be applied?
- A2. The U.S. Government respects the right of the RMI to establish its own radiation protection standards. DOE’s responsibility is to provide data and information to allow the RMI to make informed decisions, and to aid in the RMI’s determinations regarding its regulatory standards. DOE uses references to U.S., international, and other widely accepted standards related to the protection of the public from radiation to aid in risk assessment and communication. The RMI retains the right to consider these reference standards when determining radiation protection standards.

The DOE dose limit, as sanctioned by the International Atomic Energy Agency, the International Committee for Radiation Protection, and the National Committee for Radiation Protection, for the members of the public is 100 mrem per year. These guidelines were originally developed for controlling

Questions for the Record
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dose from activities associated with the nuclear industry, nuclear waste storage and mining operations, and are not necessarily applicable to situations requiring intervention, such as conditions associated with exposure to radioactive contamination from past activities and the testing of atmospheric nuclear weapons.

In 1997, the U.S. EPA developed more specific guidance on remediation of radioactively contaminated sites and indicated that the goal of limiting increases in lifetime cancer risk to around 10^{-4} would be met if annual effective dose equivalents (EDE) were limited to 15 mrem per year. The choice of an annual effective dose of 15 mrem per year was also seen as providing a level of consistency with regulations developed by the U.S. EPA for individual protection requirements in standards for disposal of spent nuclear fuel, high-level and transuranic waste in 40 CFR Part 191. The primary objective of this regulation is to ensure cleanup of contaminated sites to acceptable levels, and the return of property to a condition suitable for unrestricted use. Following a hearing on cleanup of radioactive contamination in the Marshall Islands, the RMI adopted the 15 mrem per year EDE above background as the criterion to be used for cleanup of the northern atolls (Marshall Islands Nuclear Claims Tribunal, Memorandum of Decision and Order, NCT No. 23-0902).

- Q3. There has been much research conducted by the Department of Energy on the nuclear fallout in the Marshall Islands. What would it take to make all this knowledge available to the communities impacted by U.S. nuclear activities?
- A3. DOE has made a concerted effort to gather all available documents of past activities and has provided them to the RMI in written and/or electronic form. The results of research by the DOE Marshall Islands program are shared with the RMI and publicly posted on the Marshall Islands page of the Lawrence Livermore National Laboratory website (<https://marshallislands.llnl.gov/>) as well as through the DOE Office of Science and Technology website (www.osti.gov/opennet/).