



October 3, 2019

**Written Testimony of Navajo Nation President Jonathan Nez
Prepared for the Senate Committee on Indian Affairs
Oversight Field Hearing on October 7, 2019 to receive testimony on
“America’s Nuclear Past: Examining the Effects of Radiation in Indian Country”**

Dear Chairman John Hoeven, Ranking Member Tom Udall, and Members of the Committee, I appreciate the opportunity to provide written testimony on the impact uranium mining has had on our Navajo people. It has been 75 years since the United States opened up the Navajo Nation for uranium mining and 40 years since the historic Church Rock uranium mill spill. To summarize, our participation in the Cold War has devastated our lands and our way of life as Navajo people. The impact is not only physical but spiritual and emotional and will continue to cause much suffering for the Navajo people into the foreseeable future.

From the time of our emergence as Navajo people into our present world, our *Diyin Dine'é* have entrusted us *Diné* people with protecting and preserving our environment and land. Consequently, our Navajo creation story, as well as all of our oral traditions are intrinsically connected to our environment and land. Therefore, each Navajo individual has a sacred duty to maintain *Hózhó*, which in the English language can be translated to living in harmony and balance with our environment, land, and all living beings.

Additionally, our elders have taught us that it is only by living this way that we as Navajo people can experience wholeness, self-respect, and maintain an overall positive state of well-being. In contrast, when we don't do this, we experience *Hóchxó*, which in the English language can be interpreted as all that is ugly, unhappy and disharmonious in our world, including all of the physical impacts that we are now experiencing across our Navajo Nation. From health issues like cancer and other diseases, to social issues like depression, suicide, domestic violence, and alcohol and drug abuse, to environmental issues like drought and now radiation exposure.

While the outside world might consider these beliefs to be folly, implausible and not grounded in science, logic, or reason, we, *Diné*, are a spiritual people, and as such, we understand that our thoughts, actions, and traditional practices contain very real and inherent metaphysical power, which ultimately transfers into our daily lives, both for good and bad.

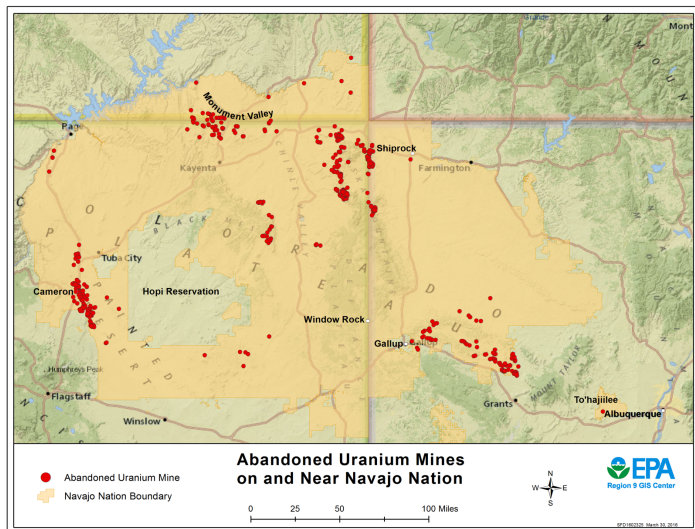
In stating this, I hope it helps you to better understand why the issue of uranium contamination on the Navajo Nation is such an important and time-sensitive issue for our Navajo people. How can we live in harmony and balance when our people are chronically being exposed to radiation and our Mother Earth has been exploited and scarred with abandoned uranium mines?

I. The Legacy of Uranium Mining on the Navajo Nation

The United States first opened up Navajo land for uranium mining in 1944 to support the U.S. Military's Manhattan Project. Following World War II, uranium mining on Navajo lands increased due to the Cold War, and the United States Atomic Energy Commission (AEC) became the sole purchaser of all uranium ore mined in the United States until 1970.¹ This subsequent mining boom led to the creation of hundreds of mines on the Navajo Nation and our Navajo people working in those mines. According to the U.S. EPA, approximately thirty million tons of uranium ore was extracted during mining operations within the Navajo Nation from 1944 to 1986.² However, we won't know the actual amount of uranium mine waste left behind until remedial site evaluations are completed for all of the abandoned uranium mines on the Navajo Nation.

Once the Cold War ended and the federal government no longer needed uranium ore to produce nuclear weapons, all of these mines were abandoned without any reclamation, let alone remediation. Indeed, it was a requirement in the AEC's lease agreements with the private mining companies who were extracting the uranium ore that no reclamation work was to be performed in case the United States should ever decide to restart the uranium mining on Navajo land so it could again purchase the uranium ore.

According to U.S. EPA, there are approximately 524 abandoned uranium mine sites on the Navajo Nation, while the Navajo Nation estimates that there could be far more. Unfortunately, only 219 of EPA's identified sites have available funds for clean-up and remediation efforts, leaving a total of 305 sites not being addressed, and that pose severe environmental and health hazards to surrounding areas and people.³ Additionally, while these 219 sites have funds available, which total approximately \$1.7 billion, it is not yet clear whether this amount is sufficient. Moreover, the Navajo Nation estimates that it will cost an



¹ Brugee, Doug, Timothy Benally, and Esther Yazzie-Lewis. *The Navajo People and Uranium Mining*, Albuquerque: University of New Mexico Press, 2006.

² Navajo Nation: Cleaning Up Abandoned Uranium Mines. (2019, April 12). Retrieved July 9, 2019, from <https://www.epa.gov/navajo-nation-uranium-cleanup>

³ Abandoned Uranium Mine Settlements on the Navajo Nation. (2018, April). Retrieved July 9, 2019, from https://www.epa.gov/sites/production/files/2018-05/documents/navajo_nation_settlement_fact_sheet-2018-04-18.pdf

additional \$3.5 billion to address the remaining 305 sites, which does not include the cost of long-term monitoring and maintenance of areas where hazardous waste may be contained in a disposal cell.

There are also four Uranium Mill Tailings Remediation Control Act (UMTRCA) sites located within the Navajo Nation. These sites exist as a result of the uranium mill processing sites that were decommissioned by the United States. Here, the radioactive mill tailings were merely capped with clay and rock and left at the former mill sites. As a result, the groundwater underneath these sites has been severely impacted with hazardous waste contamination. These disposal cell sites are located in Mexican Hat, Utah, Shiprock, NM, Tuba City, AZ, and Monument Valley, Arizona.

There is also one other uranium mill processing site located immediately adjacent to the Navajo Nation in Church Rock, NM, which has caused severe heartache for the Navajo people living in that area. It was here, on July 16, 1979, that the largest hazardous waste spill in the history of the United States occurred when the earthen dam to the pond holding the processing mill's uranium tailings was breached.⁴ The spill, releasing over 1,000 tons of radioactive mill waste and 93 million gallons of acidic radioactive tailings solution into the Puerco River, traveled downstream through the Navajo Nation, to the community of Sanders, AZ, located nearly 60 miles west of the spill site.⁵ The effects of this spill are still being felt today and may be linked to the discovery of elevated levels of uranium in the local school's drinking water. The cleanup and management of these sites is currently being performed and monitored by the Department of Energy Office of Legacy Management at an annual cost of approximately \$4 million.⁶ This does not include cleanup of the Sanders water contamination.

At present, the uranium legacy on the Navajo Nation is not only costly, but the remediation efforts are also fragmented across numerous federal agencies, including the U.S. Environmental Protection Agency (EPA), U.S. Bureau of Indian Affairs (BIA), U.S. Nuclear Regulatory Commission (NRC), the U.S. Department of Energy (DOE), Indian Health Service (IHS), and the Agency for Toxic Substances and Disease Registry, just to name a few. This fragmentation results in constant state of evaluations and re-evaluations but never promulgates steps toward expedited remediation.

⁴ Community Involvement Plan. (2016). Retrieved July 9, 2019, from https://www.epa.gov/sites/production/files/2017-11/documents/cip_northeast_churchrock_kerr-mcgee_quivira.pdf

⁵ *Id.*

⁶ Federal Plans: Related Documents. (2018, September 20). Retrieved July 9, 2019, from <https://www.epa.gov/navajo-nation-uranium-cleanup/federal-plans-related-documents#docs>

II. Abandoned Uranium Mines and Clean-up Efforts

In October 2007, at the request of the U.S. House Committee on Oversight and Government Reform, USEPA, along with the BIA, the NRC, the DOE, and the IHS developed a coordinated Five-Year Plan to address uranium contamination on the Navajo Nation.

Because the plan's objectives in that initial Five-Year Plan were never completely met, a second Five-Year Plan was created in 2014, in an attempt address the work still needing to be done during the first five years, and to establish objectives and strategies in moving forward to better address the most significant risks to human health and the environment. However, the Navajo Nation feels that it was never adequately consulted on either plan, which is evidenced by the fact that these plans fail to contain issues, concerns, objectives, goals, and desired outcomes most important to the Navajo Nation.

Some of the aforementioned include: (1) comprehensive groundwater studies for all uranium impacted areas; (2) comprehensive Nation-wide studies regarding the health impacts to our Navajo people as the result of seven decades of chronic radiation exposure; (3); comprehensive Nation-wide studies regarding potential risk exposure pathways, including the plants we traditionally eat and use for ceremonial purposes, our sheep and livestock, which are primary sources of sustenance, and the water sources many of our Navajo people still use for drinking water and ceremonial purposes; (4) the establishment of cancer treatment centers on the Navajo Nation; (5) compensation and relocation for all Navajo families living in areas impacted by uranium mining; (6) the capacity building of our Navajo Nation Environmental Protection Agency to take the lead on addressing the abandoned uranium mine sites on the Navajo Nation; (7) including traditional and cultural knowledge into the CERCLA clean-up process, as well as in determining risk assessment components, prioritization factors, and so forth; (8) accountability and communication to the Navajo Nation from the various federal agencies regarding their outlined objectives; (9) a comprehensive strategic plan outlining the roles and duties of each federal agency in relation to the Navajo Nation's own lead agency, the Navajo Nation Environmental Protection Agency; (10) a more direct funding approach in providing resources to the Navajo Nation Environmental Protection Agency so that it has flexibility and discretion to more effectively and efficiently operate; (11) utilizing and researching better practices and technologies for site assessment and clean-up of uranium waste, which could significantly reduce clean-up costs and provide better clean-up outcomes; and (12) a comprehensive plan to address how the federal government will fund the additional 305 sites not currently being addressed, just to name a few.

At present, another Ten-Year Plan is currently being developed, which is supposed to be



submitted to the Navajo Nation's Environmental Protection Agency for comment. However, here again, the Navajo Nation was not an active participant in the underlying development of this plan, and suspects that it too will be devoid of the same said points.

Additionally, the Navajo Nation specifically requests the following from the United States:

1. That the Phase 2 Priority Orphan Mine Trust, which is the result of a settlement agreement between the Navajo Nation and the United States to complete remedial site evaluations at 30 abandoned uranium mine sites for which the United States is the responsible party, be expanded to 48 sites, and also include: (1) the 18 sites not currently being addressed in the Tachee/Blue Gap area; (2) the 9 sites not currently being addressed in the Cove area; and (3) the 8 sites not currently being addressed in the Tse Tah area. Additionally, in relation to groundwater contamination, the current settlement agreement only includes 2 water studies. The Navajo Nation would like this number expanded to 5, and to include the following geographic areas: (1) Sanders, AZ; (2) Cameron, AZ; (3) Church Rock, NM; (4) Tse Tah, AZ; and (5) Tachee/Blue Gap, AZ. Lastly, that the settlement agreement be amended to not only include the completion remedial site evaluations for these 48 sites, but also clean-up.
2. That the Tronox abandoned uranium mine sites on the Navajo Nation receive first priority in relation to clean-up activities under the Tronox settlement agreement.
3. That the United States pass comprehensive legislation allocating permanent funds to the clean-up of all abandoned uranium mines on the Navajo Nation. However, in the interim, that the United States DOJ begins negotiations with the Navajo Nation for additional funding to address the 305 sites with no current funding.
4. That the USEPA works towards establishing the Navajo Nation Environmental Protection Agency as the lead agency for the clean-up of all abandoned uranium mine sites on the Navajo Nation.

Another area of concern for the Navajo Nation that is currently not being addressed as part of the present uranium contamination clean-up efforts is the previously mentioned UMTRCA sites within the Navajo Nation, which are overseen by the DOE. All of these sites have groundwater issues and the remediation strategy that was implemented has not been successful. As a result, DOE is now reevaluating their approach and is considering 3 across the board alternatives for these sites:

Alternative	Main Points
#1: Remove Pond – Continued Monitoring	<ul style="list-style-type: none"> • Remove evaporation ponds. • Cease contaminate extraction and use supplemental standards. • Continued Monitoring. • May include removal of unneeded infrastructure throughout site.
#2: Replace Pond – Implement Newer	<ul style="list-style-type: none"> • Replace pond. • Continue contaminate extraction.

Technology	<ul style="list-style-type: none"> • Implement newer remediation technologies.
#3: No Action	<ul style="list-style-type: none"> • Continue with current strategy. • Monitor buildup of sediment in pond. • Repair liner as needed.

As to these alternatives, 1 and 3 are not acceptable, but the Navajo Nation supports alternative 2 upon further consultation with the Navajo Nation.

III. Cancer Among the Navajo

Cancer is the second leading cause of disease and death for the Navajo people.⁷ Cancer rates have doubled on the Navajo Nation from the 1970s to the 1990s. The Indian Health Service estimates that 7.3 percent of all deaths in the Navajo Area Indian Health Services region were due to cancer from 1999 to 2001. From 2005-2013, the cancers with the ten highest incidence counts among the Navajo were female breast, colorectal, stomach, prostate, kidney, uterine, stomach, non-Hodgkin lymphoma, pancreas, liver, and lung.

In comparing the incidence rates of cancers by gender, Navajo men were more likely to be diagnosed with cancer. Prostate cancer was the most commonly diagnosed cancer among Navajo men, followed by colorectal cancer, kidney cancer, and stomach cancer. Among Navajo women, breast cancer was the most commonly diagnosed cancer, followed by colorectal cancer and uterine cancer, and kidney cancer.

Reports of cancer among the Navajo people were published in the medical literature as early as the 1930. A common finding in these reports was the relative low number of cancers observed among the Navajo. For example, C.G. Salsbury, M.D., a physician who worked among the Navajo in Ganado, Arizona, wrote in the Arizona Medicine that cancer rates were lower among the Navajo compared to whites and questioned whether the Navajos were protected from diabetes and cancer by their diet and nutrition.

Following World War II, uranium mining swept onto the Navajo Nation and settled within uranium-rich regions including Arizona communities of Cove and Monument Valley, and New Mexico communities of Sanostee and Church Rock. Tailings from the milling process were left untreated in Shiprock, New Mexico, Tuba City, Arizona, and Kayenta, Arizona. Decades later, increasing rates of lung cancer (10.4 cases per 100,000 persons incidence rates, 2005-2013, males and females combined, all ages) in this generally non-smoking population were attributed to occupational exposure with working in the uranium mines.

Incidence (new cases) rates compared to incidence rate of non-Hispanic white (NHW),

⁷ Navajo Nation Mortality Report, 2006-2009 (Rep.). (n.d.). Retrieved <http://www.nec.navajo-nnsn.gov/Portals/0/Reports/Vital%20Statistics%20Report%202006%20to%202009%20FINAL.pdf>.

cases per 100,000 persons incidence rates, 2005-2013, males and females combined, all ages:

- Liver (9.9 incidence rate compared to 4.8 incidence rate of non-Hispanic whites)
- Stomach (15.0 incidence rate compared to 4.3 NHW)
- kidney (25.6 incidence rate compared to 14.0 NHW)

A report covering years 1989-1993 revealed that the mortality for all cancers among American Indians and Alaska Natives (AI/AN) remained lowered compared to whites. Yet, mortality rates, in populations comparative measure, for cancers of the liver, stomach, kidney, and gallbladder were much higher than whites.

Mortality (pass away) rates compared to incidence rate of non-Hispanic white, cases per 100,000 persons incidence rates, 2005-2013, males and females combined, all ages

- Liver (8.1 mortality rate compared to 4.6 mortality rate of non-Hispanic whites)
- Stomach (9.8 mortality rate compared to 2.2 NHW)
- Kidney (7.2 mortality rate compared to 3.5 NHW)
- Gallbladder (2.9 mortality rate compared to 0.4 NHW)

AI/AN women also had significantly higher mortality rates from cancer of the cervix than white women. In a report covering years 1999-2004, incidence rates for all cancers among AI/AN, including the Navajo in the southwest were lower than whites, while cancers of the stomach, liver, kidney, gallbladder, and cervix for females were much higher.

Navajos are 7.2 times more likely to pass away from gallbladder cancer, 4.4 times more likely to pass away from stomach cancer, 2.1 times more likely to pass away from kidney cancer, and 1.8 times more likely to pass away from liver cancer than non-Hispanic whites.

Among Navajo men, mortality from prostate cancer, stomach cancer, and liver cancer were most common. And, among Navajo women, mortality from breast cancer, stomach cancer and liver cancer were most common.

IV. Disturbing the Navajo Way of Life

The stories told by our Navajo uranium workers and families of deceased mine workers and community members is unfathomable. Some common examples include an individual who as a child played in an abandoned mine or mill tailing pile, a sheep herder who watered his sheep in an un-reclaimed open pit mine, an elderly woman who for many years washed the dust-coated clothing of her uranium miner husband, or a family who obtained their drinking water from a stream that ran through or near a uranium mine.

We also hear stories of families who have had to get rid of their entire livestock herd or had to tear down a house or Hogan made with radioactive materials. There are also families who have

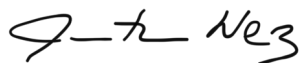
had to struggle to survive following the death of the main breadwinner in their family. And, there are those families who could not continue their participation in ceremonies for a variety of reasons such as limited mobility, loss of income, loss of traditional space/home, etc.

These stories are telling of the emotional, traditional, spiritual, and cultural loss our Navajo people have had to endure. What's more concerning is that the impact then becomes generational and our people are never able to fully heal. It is the Navajo way of life to live in harmony with everything that surrounds you; and if your land and environment remains contaminated, how do we return to a state of *Hózhó*?

V. Conclusion

In conclusion, what the Navajo people desire most is to have their lands cleaned and remediated. It's been far too long. We need to bring this long and sad period of history to a close. As President of the Navajo Nation, I call upon Congress to work with the Navajo People to address the concerns we have raised for uranium mine workers, downwinders, and families.

Ahe'hee' (thank you),

A handwritten signature in black ink, appearing to read "Jonathan Nez".

Jonathan Nez, *President*
THE NAVAJO NATION