



October 13, 2021

Via Electronic Mail

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**Subject: Response to Request for Information Regarding Establishment of the
Department of Energy Uranium Reserve Program**

Dear Mr. Fowler:

Collectively, the undersigned write today to comment on the Department of Energy's (DOE) and the National Nuclear Security Administration's (NNSA) *Request for Information Regarding Establishment of the Department of Energy Uranium Reserve Program*, 86 Fed. Reg. 44,007 (Aug. 11, 2021) (RFI) (comment period reopened to October 13, 2021, 86 Fed. Reg. 50878 (Sept. 13, 2021)).

We recognize that by law DOE must engage in this process and produce a report for Congress,¹ but whatever report is produced should present to Congress the reality of the situation. And that reality is that establishment of a uranium reserve would be a wasteful attempt to artificially prop up a polluting, environmentally catastrophic industry at the expense of environmental justice communities, scarce western groundwater, and public land treasures. Contrary to DOE's apparent hopes and the ostensible purpose of the RFI, a uranium reserve would not help revitalize the nuclear fuel cycle or address climate change, and it would certainly not promote energy justice. Further, none of the described potential activities can take place prior to a thorough programmatic review pursuant to the requirements of the National Environmental Policy Act. 42 U.S.C. §4321, *et seq.* We detail these issues below.

Artificially “reinvigorating” the domestic nuclear fuel supply chain is not responsive to the President’s Justice40 Initiative and will only result in yet more harms to vulnerable communities across the West. The White House Environmental Justice Advisory Council’s

¹ See, Consolidated Appropriations Act, 2021 (Pub. L. 116–260); *see also*, Congressional Record, 116th, 2nd Session, Vol. 166, December 21, 2020 No. 218—Book IV at H8376. found online at <https://www.govinfo.gov/content/pkg/CREC-2020-12-21/pdf/CREC-2020-12-21-house-bk4.pdf>.

Interim Final Recommendations on Justice40 state quite plainly that “the procurement of nuclear power” “will not benefit a community.”² The Interim Final Recommendations further explains that “100% of investments [for Justice40] must do no harm to Environmental Justice communities. We want 100% Justice; it would be unreasonable to have any climate investment working against historically harmed communities.”³ A uranium reserve would do harm to Environmental Justice communities and especially to communities that have historically already been harmed.

Uranium extraction’s health and natural resource impacts have always and continue to fall disproportionately on low-income communities and communities of color. The disparate impacts on these vulnerable communities manifest through both occupational exposures and exposure to mining and processing byproducts and waste, *i.e.*, environmental exposures. Indigenous peoples have felt the brunt of these impacts because, historically, 80–90% of uranium extraction occurred on or adjacent to indigenous lands.⁴ In New Mexico, for example, Navajos were hired only after Whites were given the opportunity to fill a job and were invariably only given the most unskilled and dangerous positions such as underground miners and ore haulers.⁵ As a result, Navajos were more likely to be exposed to uranium decay products in the course of their work. And recent research has linked living in close proximity to unreclaimed or inadequately reclaimed uranium mines to a broad range of disease including hypertension, heart disease, and kidney disease.⁶ Further, environmental and public health mitigation measures are less likely to be implemented in minority communities and waste remediation is less likely to be adequate, and whatever benefits, such as employment and tax revenue, that may accrue as a result of uranium extraction are inequitably distributed, particularly if extraction occurs in an Indigenous community.

This disregard for the disparate impacts of uranium development on communities of color is unfortunately not a relic of the past. In a modern in-situ leach recovery mine licensing effort, the Nuclear Regulatory Commission effectively ignored the very presence of 170 Navajo households near a proposed ISL mine in New Mexico, expressing incredulity at how the proposed mine located in the “vastness of the desert” could possibly have any health impacts on any community of color.⁷

While this particular RFI is an improvement on the Trump Administration’s uranium reserve RFI in that it entertains the notion that it might want information on the disparate health and

² White House Environmental Justice Advisory Council, Justice40 Climate and Economic Justice Screening Tool & Executive Order 12898 Revisions Interim Final Recommendations, at 57-58 (emphasis in original) (May 13, 2021) https://www.epa.gov/sites/default/files/2021-05/documents/whejac_interim_final_recommendations_0.pdf.

³ *Id.* at 55.

⁴ Taylor, Dorceta, *Toxic Communities: Environmental Racism, Industrial Pollution and Residential Mobility*, New York University Press, at 56 (2014).

⁵ *Id.* at 56-57.

⁶ Harmon, et. al., *Residential Proximity to Abandoned Uranium Mines and Serum Inflammatory Potential in Chronically Exposed Navajo Communities* at 6, *J. Expo. Science & Env’tl Epi.*, Advanced Online Publication, doi: 10.1038/jes.2016.79 (Jan. 25, 2017),

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5781233/pdf/nihms934819.pdf>; Hund, et. al., *A Bayesian Framework for Estimating Disease Risk Due to Exposure to Uranium Mine and Mill Waste on the Navajo Nation*, 178 *Statistics in Society* 1069, 1090 (Oct. 2015).

⁷ *Hydro Resources, Inc.*, LBP-99-30, 50 NRC 77, 123 (1999).

environmental impacts that uranium mining has on communities of color and low-income communities, suggesting it is part of the Justice40 framework is objectionable.

The DOE provides no reference or explanation of *why* domestic nuclear fuel production capabilities are important or related to the nuclear industry’s ability to assist in meeting our climate crisis, and the evidence, in fact, points to the opposite conclusion. To begin with, the domestic nuclear industry is declining. The nuclear industry *currently* provides approximately 50 percent of America’s *low carbon* energy,⁸ and that number has been decreasing over the past several years, and at a faster clip with each successive year. In 2010, the nuclear industry provided 69 percent of domestic low carbon electricity.⁹ In 2015, that share was approximately 63 percent. This past year, the industry’s contribution dropped to just half, marking the first time that renewable forms of generation provided almost equal generation as the nuclear power industry.¹⁰ And by 2022, the U.S. Energy Information Administration expects renewables to provide more power than nuclear.¹¹

Moreover, the success of the nuclear power industry is not tied to the domestic uranium mining industry. First, uranium fuel costs are a comparatively *de minimis* amount in the cost of operation for a commercial nuclear reactor. Indeed, the challenges faced by domestic nuclear fuel suppliers are those created by the world marketplace for uranium. There is a long-established world market for uranium that under current conditions provides a product to its customers without supply issues. Putting aside the fact the United States *already has* a store of excess uranium, two of the four most significant suppliers for the United States – Australia and Canada – are nations with whom the United States should have no short or long-term concerns over restrictions on potential supply. These countries, and others, have ample uranium deposits. Indeed, an unchallenged 2007 review of uranium supplies found that the world had more than a century’s worth of relatively accessible stores of uranium.¹² And the domestic market need for uranium is

⁸ The nuclear fuel cycle has significant environmental and public safety impacts and is not “clean.” Nuclear plants pose a continuing risk of nuclear accidents, including a small, clear probability of a high-consequence event such as the Fukushima disaster in Japan. Further, environmental harms and risks from the nuclear fuel cycle include radionuclide and heavy metals contamination from uranium mining and processing activities, massive freshwater withdrawals and evaporative losses for reactor cooling, excessive thermal discharges to aquatic environments, and massive entrainment and destruction of young fish stocks by reactor condenser cooling systems. And most long lasting among nuclear power’s environmental impacts is nuclear waste – specifically, the production of spent nuclear fuel. Although nuclear power emits substantially less harmful greenhouse gases than fossil fuels, the nuclear fuel cycle produces a deadly and long-lasting byproduct: highly radioactive spent nuclear fuel. At high doses, radiation exposure will cause death. At lower doses, radiation still has serious health effects, including increased cancer risks and serious birth defects such as mental retardation, eye malformations, and small brain or head size. For these reasons, we concur the nuclear fuel cycle is low carbon, but is far from “clean.”

⁹ EIA Net Generation by State by Type of Producer by Energy Source, <https://www.eia.gov/electricity/data/state/?src=email>

¹⁰ EIA Electric Power Monthly, <https://www.eia.gov/electricity/monthly/>.

¹¹ See <https://www.eia.gov/electricity/monthly/>.

¹² See Allison M. Macfarlane and Marvin Miller, *Nuclear Energy and Uranium Resources*, Elements, Vol. 3, pp. 185–192 (June 2007) http://elementsmagazine.org/get_pdf.php?fn=e3_3.pdf&dr=e3_3; Dr. Macfarlane and Mr. Miller noted in pertinent part: [c]ertainly, there is plenty of uranium to see us out this century and likely enough for another century. Unconventional resources not counted by the Red Book may add significantly to these figures.” *Id.* at 189.

not currently growing, nor does it demonstrate any likelihood that it will in the next decade. Simply put, domestic uranium recovery cannot compete reasonably in a world market.

But make no mistake, we fully understand that the nuclear industry will continue to exist for some years and that uranium fuel will be necessary for the time the existing fleet operates. But the creation of a uranium reserve and an artificially revived domestic uranium mining industry will not make meaningful impacts on the viability of the nuclear industry in a carbon-constrained world.

Attempting to suggest that a uranium reserve is somehow akin to “climate investment” is objectionable. Creation of a uranium reserve will not assist in addressing the climate crisis but rather may exacerbate impacts of the crisis and work directly against community resiliency. In the intermountain West, Nebraska, and Texas, where much of the in-situ leach (ISL) uranium mining processing has taken place and where new or expanded mines could commence operations, population growth, prolonged dry weather conditions, and competing resource extraction technologies (such as coal bed methane drilling) have created severe competition for surface and underground freshwater resources. The climate crisis is set to exacerbate the limit on freshwater resources in the West. Thus, rather than a climate investment, permanent loss of freshwater aquifers due to contamination from ISL mining activities is a significant social and economic issue for the region both in the short and long term, and especially in a warming world.

Recent developments in Wyoming have substantially added to our already sizable concerns. Specifically, the Nuclear Regulatory Commission and the State of Wyoming are now allowing for acid based ISL mining, another significant step down the road to permanently contaminating huge swathes of scarce western groundwater. Artificially propping up the industry for what would be at best marginal gains for a few private actors would create massive future mine cleanup costs; the potential permanent impairment to groundwater resources; the potential to contaminate other valuable mineral deposits; and the potential damage to future agricultural, residential, and recreational uses of the land. And under the current regulatory system, there exists no meaningful protection against any of those harms. Simply put, a uranium reserve will not contribute to a climate investment but rather the aggravation of climate impacts.

Finally, there are several important federal actions that can and must be undertaken with respect to uranium recovery. First is finalizing the Environmental Protection Agency (EPA)’s uranium recovery regulations.¹³ Ensuring that EPA has protective regulations in place for any new uranium recovery is a bare minimum requirement in any attempt to guarantee we do not subject vulnerable western communities and scarce groundwater to yet another round of uranium recovery harms.

Equally important is to finally address the massive cleanup and environmental injustices associated with the domestic uranium industry’s legacy. Indeed, while the RFI invokes the

¹³ Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings, Proposed Rule, 80 Fed. Reg. 4,156-187 (Jan. 26, 2015) (EPA’s first proposed rule); Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings, Proposed Rule, 82 Fed. Reg. 7,400-430 (Jan. 19, 2017) (EPA’s second proposed rule).

Administration's admirable commitment to environmental justice that is found in Executive Order 14008 and the Justice40 Initiative, it elides the fact that the entire history of uranium recovery has been a tragic, polluting burden on vulnerable communities across the American West. Finally addressing and cleaning up this historic environmental burden is, in contrast to creating a uranium reserve, precisely in line with the Administration's commitments to addressing environmental justice.

Further, the Administration should once and for all remove iconic public lands such as the Grand Canyon from ever again being subjected to the harms of uranium recovery. Even if this DOE states in this RFI that it does not intend such new production instigated by the uranium reserve to initiate or expand on public or tribal land, Administrations and Congresses change. Creating a uranium reserve that artificially spurs unnecessary, uneconomic, and weakly regulated uranium mining in the American West places a direct and future bullseye on these iconic American landscapes. Whether this Administration insists on continuing with a uranium reserve or not, it should take every step to ensure nothing of the kind ever comes to pass.

These actions would cost substantially less and be wiser actions than implementing an unnecessary reserve that fosters an artificially rigged uranium market designed to shelter domestic producers (who are generally owned by foreign companies) from competition, and further expanding the already dramatic toll on Western water resources, landscapes, and communities.

Before we close, we stress that, should the Administration insist on moving forward with a uranium reserve, the DOE has significant legal obligations under the National Environmental Policy Act (NEPA), 42 U.S.C. §4321, *et seq.*, that must be met before any final decisions on major federal actions are made. We address this in an extended, detailed form in more technical comments sent this day under separate cover by a subset of the undersigned.

Thank you for your attention and consideration.

Sincerely,

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