

## Environmental Justice and Equity Framework for Siting Nuclear Energy in America's Arctic

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### ABSTRACT:

This NEUP proposal, led by the Alaska Center for Energy and Power (ACEP) at the University of Alaska Fairbanks, aims to create an environmental justice framework for future nuclear energy deployment in Arctic communities and other historically underserved populations in the United States. This project is especially poignant in righting a historic wrong related to the Atomic Energy Commission Plowshare Program project known as "Project Chariot," a project which has largely been forgotten about at the national level but which has sowed significant generational distrust in nuclear technologies and the motives of the federal government. This legacy is ongoing, with some Alaska Native elders refusing to consume local caribou due to fear of contamination from tests conducted during the Plowshare era, and a general suspicion that the documented high cancer rates in the region are a direct or indirect result of that same testing.

Our project objectives are to (1) establish new community engagement strategies that address historic perceptions related to environmental contaminants in the Arctic associated with historic testing of radioactive materials; (2) build student- and community-led environmental monitoring and data analytic capabilities that will empower local citizens; and (3) develop a road map for understanding the opportunity space for micro-nuclear reactors (MNRs) in rural Alaska communities and similar remote areas, as part of a broader landscape of other sustainable and low-carbon energy options. ACEP has an extensive history of collaborating with communities in the Northwest Arctic Borough and is leveraging extensive existing community partnerships to support this program. For example, ACEP is currently partnering with the regional hub community of Kotzebue to leverage and enhance existing local expertise through the development of a community-centric innovation hub. In addition, the T3 (Teaching Through Technology) Alliance program, which is a partner in this innovation hub approach, has a long history of collaboration with communities and youth in rural Alaska to use low-cost technology tools and to collect information about energy and sustainability issues in their communities. Additional project partners at the Massachusetts Institute of Technology, the University of California Berkeley and Pacific Northwest National Laboratory bring specific scientific and subject matter expertise – including radiation detections, environmental/social science, and advanced reactors – to the program to augment the Alaska-based team. The outcome of this project will be a participatory-based approach for future decision-making related to nuclear energy and broader energy choices in Alaska, which will serve as a model for efforts in other rural and/or remote locations. Throughout the project, we take advantage of recent innovations in sensor technologies and data science for effective data visualization, web-based tools, and social engagement, as well as make them accessible for the local communities. We aim to *reset* environmental narratives and communication by establishing a new baseline understanding of nuclear energy and a better understanding of the environmental costs of both status quo and alternative energy sources. This process is designed to address a historic wrong by involving community partners in the evaluation of the equity and justice impacts of energy decisions.



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