

DOE Targets Marginalized Communities for Frontline Nuclear Work

By Eileen O'Shaughnessy

Attempts are underway to “modernize” the United States nuclear arsenal via increased plutonium pit production at the Los Alamos National Laboratory (LANL) in northern New Mexico and the Savannah River Site in South Carolina. The National Nuclear Security Administration claims that aging plutonium pits, the spherical triggers to nuclear weapons, must be replaced as a matter of national security. The Center for Arms Control and Non-Proliferation has pushed back, stating, “Expanded pit production is not necessary to maintain the safety or reliability of the existing U.S. nuclear weapons stockpile and could feed perceptions of a nuclear arms race.”

The physical labor of manufacturing plutonium pits involves frequent exposure to and handling of radioactive and hazardous materials including beryllium, plutonium, and solvents. In order to encourage a new generation of workers to fill the nuclear industry’s most dangerous frontline jobs, including plutonium pit manufacturing, the U.S. Department of Energy (DOE) has partnered with multiple educational institutions to create a “workforce pipeline program” to funnel students into these positions.

In New Mexico, the following institutions of higher education have initiated training programs for frontline nuclear work in their curricula: Santa Fe Community College, Northern New Mexico College, and University of New Mexico Los Alamos. These schools predominantly serve students of color and all have the designation of “Hispanic-Serving Institution.” Northern New Mexico College, located in Española, just adjacent to Los Alamos, has a student body made up of over 90 percent students of color. Three-fourths of students identify as Hispanic and over 10 percent of students identify as Native American. The majority of students are first-generation college students who are drawn from the largely rural population surrounding the 40-mile radius of the campus in Española (Northern New Mexico College website, 2022).

In a December 2022 report released by independent scholars Katherine Shera and Benjamin Bonnet

(“DOE Workforce Pipelines in Northern New Mexico”), the scope of the workforce pipeline is laid out in grave detail. The authors point out that workers would be exposed to dangerous chemicals and radio-nuclides not only in manufacturing, but also in the process of handling, characterizing, and storing the radioactive waste. Frontline workers have a heightened risk of injuries as well as developing chronic illnesses with long latency periods such as leukemias, cancers, and neurological disorders.

It is important to note that students at these northern New Mexico schools are not being targeted for the research and development careers at LANL, which often come with less risk and exposure to toxic materials than technical work. The DOE’s workforce pipeline program is focused on filling technical, subcontractor, and frontline work, which carries a greater level of exposure. Shera and Bonnet note an existing racial stratification of jobs and thus, stratification of risk at LANL. A 2015 LANL report revealed that only about 9 percent of scientists and research and development engineers and 7 percent of postdoctoral positions at LANL identified as Hispanic or Native American, while fully two-thirds of technicians did so (Márquez, 2015). Therefore, the DOE workforce pipeline program is maintaining an existing structure of nuclear colonialism and racial hierarchy whereby communities of color are placed in the most dangerous jobs with the highest risk.

It is important to ask what exactly is being taught to students in these workforce training programs. Are they being given important information about the risks of radiation exposure and contamination, especially for people who are pregnant, and people with uteruses? Are they being given adequate protection as they enter some of the most dangerous jobs in the entire nuclear industry? For targeted marginalized communities, claims of economic opportunity in



Image by Oona Tempest for Kaiser Health News ‘American Diagnosis’ podcast

the name of national security come with a burden of risk and harm that is all too familiar in the deadly legacy of nuclear colonialism.

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Ukraine Peace

Continued from page 2

—The U.S. could commit with Russia to resume mutual reductions in their nuclear arsenals, and to suspend plans to build more dangerous weapons. They could restore the Treaty on Open Skies, from which the U.S. withdrew in 2020, so both sides can verify the other is removing and dismantling the weapons.

—The U.S. could remove its nuclear weapons from the European countries where they are deployed: Germany, Italy, the Netherlands, Belgium, and Turkey.

De-escalation would give Russia a tangible gain to show its citizens. It would allow the U.S. to reduce military spending and enable Europeans to take charge of their own security, as their people want.

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Clean Energy or Weapons?

What the ‘breakthrough’ in nuclear fusion really means

By M.V. Ramana

On December 13, the U.S. Department of Energy announced that the National Ignition Facility at the Lawrence Livermore National Laboratory (LLNL) had reached a “milestone:” the achievement of “ignition” in nuclear fusion earlier in the month. That announcement was hailed by many as a step into a fossil fuel-free energy future.

But in truth, generating electrical power from fusion commercially or at an industrial scale is likely unattainable in any realistic sense, at least within the lifetimes of most readers of this article. At the same time, this experiment will contribute far more to U.S. efforts to further develop its terrifyingly destructive nuclear weapons arsenal.

Challenges for Nuclear Fusion

The first challenge is to produce more energy than is put into the target. The National Ignition Facility (NIF) reports 3.15 megajoules came out [over the 2.05 MJ lasers shot at the target] ... which would produce perhaps 0.3 kilowatt-hours of electricity if it was used to boil water and drive a turbine. For comparison, a rooftop solar panel could generate around 5,000 times more electrical energy in a year.

NIF admitted that just the 192 lasers consumed around 400 MJ in the process of ignition. To this, we have to add all the energy that goes into running the other equipment and the facility as a whole. As Daniel

Jassby, a retired physicist from the Princeton Plasma Physics Lab, put it, all this “must appear on the negative side of the energy accounting ledger.”

How do you convert this experimental setup that produces energy for a microscopic fraction of a second into a continuous source of electricity that operates 24 hours a day and 365 days per year? To do that, these fusion reactions should occur several times each second, each second of the day, each day of the year. As of now, the lasers can fire only once a day, at a single target.

NIF and Nuclear Weapons

NIF’s chief purpose is not generating electricity or even finding a way to do so. NIF was set up as part of the Science Based Stockpile Stewardship Program, which was the ransom paid to the U.S. nuclear weapons laboratories for forgoing the right to test after the United States signed the Comprehensive Test Ban Treaty. This is a purpose NIF can start fulfilling without ever generating any electricity, as the LLNL webpage proudly proclaims.

Back in 1998, Arjun Makhijani, who has a PhD in nuclear fusion, and Hisham Zeriffi, a physicist and co-author of the report, suggested that NIF could help with the development of pure fusion weapons, i.e., thermonuclear weapons that do not need a nuclear fission primary, which would obviate the need for highly enriched uranium or plutonium. NIF, then, is a way to continue investment into modernis-

ing nuclear weapons, albeit without explosive tests, and dressing it up as a means to produce “clean” energy. When anthropologist Hugh Gusterson asked a senior official about the purpose of the laser program, the official replied, “It depends who I’m talking to ... One moment it’s an energy program, the next it’s a weapons program. It just depends on the audience.”

Dangerous Distraction

The tremendous media attention paid to NIF and ignition amounts to a distraction – and a dangerous one at that. The Intergovernmental Panel on Climate Change has warned that to stop irreversible damage from climate change, the world will have to achieve zero net emissions by 2050. Given this short timeline to turn around our economies and ways of living, spending billions of dollars on fusion power only amounts to diverting money and resources away from proven and safer renewable energy sources. Meanwhile, nuclear fusion experiments will further the risk posed by the nuclear arsenal. We need nuclear weapons abolition, but programs like NIF offer nuclear weapons modernisation, which is just a means to assure destruction forever.

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