

Nuclear impacts: Uranium, waste, and nuclearity
Allison Macfarlane, George Mason University

Author Information: Allison Macfarlane, George Mason University, amacfarl@gmu.edu

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(Editors Note: On 30 March 2012, Gabrielle Hecht gave the 23rd Annual Nicholas Mullins Distinguished Lecture at Virginia Tech (please refer to the poster announcing the talk; PDF 3.4 MB). Hecht's Mullins lecture, and lecture for STGlobal on 31 March, was based on both her recent book *Being Nuclear: Africans and the Global Uranium Trade* (MIT Press, 2012) and article "An elemental force: Uranium production in Africa, and what it means to be nuclear" published in the *Bulletin of the Atomic Scientists* (March/April 2012). Allison Macfarlane reviews Hecht's article.)

Gabrielle Hecht's article, "An elemental force: Uranium production in Africa, and what it means to be nuclear," published in the *Bulletin of the Atomic Scientists*, explores how things, governments, and locations become termed "nuclear," and the security, proliferation, and human implications of that designation. In the article, she examines some of the history of uranium mining in the African nations of Niger and Gabon, the impacts of that mining, and the ramifications when the uranium is designated as "nuclear."

Hecht shows that whether something is considered nuclear is not a function of the thing itself, but is instead a social construct, a "technopolitical" construct in her terms, that depends on the particular social, political, and cultural issues at the time. Thus, in 1957, when convenient for South Africa for uranium mining to be considered nuclear, it was. South Africa wanted a seat on the Board of Governors of the International Atomic Energy Agency, but it had no nuclear facilities, only uranium mines. South Africa won the argument, uranium was considered nuclear, and South Africa sat on the Board.

But within a decade, uranium mining had been redefined as similar to conventional mining. The 1968 Nuclear Nonproliferation Treaty's inspections and safeguards regimes did not include uranium mines or yellowcake plants. These facilities were now to be treated like any other mine, no longer in need of regular nuclear inspections. South Africa, for its part in the 1960s, had actual nuclear facilities and would be included in the regime anyway. Hecht explains this change in status by the need to treat uranium as a commodity. With growing demand for uranium, now that it was being used to produce electricity and had moved beyond its role in nuclear weapons, mine owners saw a future need for this material. They did not want their future profits impeded by nuclear inspections.

As Hecht shows, uranium mining in both Niger and Gabon occurred under similar circumstances. It was dangerous work, exposing miners to high levels of radon, a radioactive gas. Mine operators did not implement mitigating measures, but in some cases responded by simply increasing the allowed dose workers could be exposed to. Workers experienced subsequent health consequences, but were not compensated by the mining companies and the state, though the fight continues.

Hecht also notes that uranium, as a “denuclearized” commodity, was treated in trade as such, and not regulated at the international level. Thus Niger drew up a customer list that included such places as Libya and Pakistan, both involved in the proliferation of nuclear weapons. She also shows, that when convenient for political circumstances in the West, uranium, and its derivative, yellowcake, were deemed “nuclear.” In the run-up to the U.S. war with Iraq in 2003, the George W. Bush administration made much of the alleged purchase of yellowcake from Niger by Iraq as proof that Iraq was developing a nuclear bomb. Thus, when it suited the powers that be, uranium was considered nuclear.

The concept of “nuclearity,” or whether and by how much an object, nation, place, or policy is nuclear, runs throughout the article and can be applied to issues beyond uranium mining, such as radioactive waste disposal. The nuclearity of radioactive waste has often been central in the inability to find a way to dispose of it. Communities don’t want a “nuclear dump” in their backyards, as is shown by the reaction of the state of Nevada in the U.S. to the decision by the Congress in 1987 to characterize a site for a repository within their borders.

Nations that have had success in siting a repository, Sweden and Finland, in particular, achieved that success in part by finding host communities that were already accepting of the nuclearity of facilities. In other words, the named host communities in these countries already had nuclear facilities (nuclear power reactors, in particular) and were not put off by “nuclear waste.” But this rule of thumb does not always hold: the only operating deep geologic repository for nuclear waste, in this case plutonium-contaminated equipment and materials from the U.S. nuclear weapons complex, lies in Carlsbad, New Mexico, a place once familiar with potash mining and oil and gas exploration, but not nuclear things. The community offered themselves up as a potential site in the 1970s for economic reasons, as potash mining had withered, and though there was over a decade of fighting against the importation of nuclear waste by the state, the community now embraces the nuclear waste repository as a source of steady jobs and community growth and improvement. They embrace the nuclearity of the waste so much that they would now like to see more come their way, this time in the form of high level nuclear waste from the nuclear weapons complex and even from commercial nuclear power plants.

Contact details: amacfarl@gmu.edu