# Geography professor writes first in-depth account of scheme to engineer with atom bombs

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What would you think if someone told you that not so long ago, the U.S. government, led by gung-ho scientists, seriously considered exploding 300 or more atomic bombs to blast a sea-level canal in Panama? Or up to 764 in northern Colombia?

Excavating a nuclear canal through the Central American isthmus would have required 20,000 times the explosive energy of the atomic bomb that shattered Hiroshima, engineers estimated.

You'd think that someone was kidding, right?

But that's just what government scientists hoped to do. They also came close to detonating a nuclear device in the early 1960s in the pristine northwest corner of Alaska near Point Barrow to "build" a harbor.

And they spent some $750 million of taxpayers' money (in 1996 dollars) during the lifetime of the scheme, which the Atomic Energy Commission called Project Plowshare. And, as part of their work, they did in fact explode numerous bombs not far beneath Nevada's desert floor and left large craters there.

Now, a University of North Carolina at Chapel Hill researcher has written the first comprehensive account of the ill-fated Cold War engineering project. His new book, titled "Proving Grounds" and subtitled "Project Plowshare and the Unrealized Dream of Nuclear Earthmoving," has just been published by Rutgers University Press.

"This is a book about the hubris of a Cold War nuclear weapons laboratory looking to diversify into civil engineering and regional development -- geographical engineering, as they called it," said author Scott Kirsch, assistant professor of geography in UNC's College of Arts and Sciences. "But I also wanted to tell the story of the opposition that these experiments galvanized, especially among environmental scientists.

"This opposition was critical both to the eventual defeat of Plowshare and to the development of the environmental movement in this country," he said. "From Plowshare, we can learn about the role of science in environmental politics, as well as the politics of science itself."

Government interest in the nuclear engineering idea grew out of the contingencies of nuclear testing politics at the laboratory, national and international scales, Kirsch said. Other main factors arose from the weapons scientists' fascination with the idea of nuclear earthmoving and the desire, among some, to turn "the bomb" into something good.

Some 54 projects in 25 countries were considered as potential sites for nuclear excavation, according to records he discovered from the University of California's Lawrence Livermore National Laboratory, where the program was housed.

Physicist Edward Teller was a major proponent of Plowshare, which ran from 1957 until 1974. "If anyone wants a hole in the ground, nuclear explosives can make big holes," Teller said.

Part of what ultimately sank the project, the author found, were challenges to the conceit that atomic fallout from the nuclear blasting could be accurately predicted and harmless.

Today, one of the Nevada craters from Plowshare, "Sedan," is the leading attraction on occasional public tours of the Nevada Test Site, Kirsch said. That's despite the fact that radiation around the crater remains above normal.

"Nuclear excavation under Plowshare actually peaked with Sedan in 1972," he said. "In fact, more than 40 years later, it remains not only the largest Plowshare crater, but the most massive of all the nearly 100 surface and near-surface explosions set off at the Nevada Test Site between 1951 and 1992.

"The crater itself now stands as a fitting epitaph to Plowshare, to beliefs in unlimited control over nature and technology, to nuclear testing practices guided by haste and arrogance, and, not least, to the limits imposed on these practices."

Already Kirsch's book is attracting strong praise.

Paul Boyer, author of "By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age," called the book thoughtful

and deeply researched.

"'Proving Grounds' offers a very readable history of a determined if ultimately doomed effort to turn atomic energy into peaceful purposes by reconfiguring the contours of the earth itself, starting with the Panama Canal," Boyer wrote. "In exploring this unlikely byway of the Atomic Age, historical geographer Scott Kirsch casts a skeptical light on the American belief in progress through science and probes issues that remain as timely today as they were a generation ago."

Source: University of North Carolina at Chapel Hill