

Secret clean-up secures weapons-grade plutonium dump

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It is always good to learn that the world has become a safer place – especially when the danger was a warren of unsecured tunnels containing enough plutonium to make dozens of nuclear bombs.

The radioactive material was at [Semipalatinsk in east Kazakhstan - a former nuclear test site where numerous birth defects have been reported](#). Credit for the unprecedented, 17-year clean-up goes to US and former Soviet nuclear weapons scientists. Working mostly through personal contacts, they convinced mutually suspicious governments to back their work, and kept the details secret – even from the [International Atomic Energy Agency](#). The US government footed the bill, [to the tune of \\$150 million](#).

"It really speaks to the ethics of scientists," observes [Charles Ferguson](#), president of the Federation of American Scientists in Washington DC and a specialist in nuclear proliferation.

The effort is [described in a report](#) released on 15 August by Harvard University's Belfer Center for Science and International Affairs. The report's authors argue that similar grassroots co-operation between scientists could help secure other nuclear sites – sidestepping the political obstacles that can prevent governments from working together on such problems.

More than 100 [atmospheric nuclear weapons tests](#) were conducted at the Semipalatinsk site between 1949 and 1962. After this time, Soviet scientists switched to underground experiments, using high explosives to crush samples of plutonium without setting off a large nuclear blast. Much of this material was discarded in the tunnels, which were left unguarded after the site was abandoned and weapons scientists headed back to Russia.

US nuclear scientists from the [Los Alamos National Laboratory](#) in New Mexico first learned of the threat on a visit to the site in 1995. The lab's former director, [Siegfried Hecker](#), was later shocked to find local people digging trenches near the tunnels to scavenge copper wire.

Hecker mobilised his contacts, getting Russian nuclear scientists to provide information and convincing the US government to bankroll the clean-up operation. To secure the site, special concrete was used to encase the nuclear material and seal the tunnels. This was conducted in large part by Kazakh engineers.

[Eben Harrell](#) of the Belfer Center, who co-wrote the report, suggests that co-operation between individual scientists could help secure other hazardous sites, such as France's nuclear test range in the Algerian Sahara.