

ESSAY

The New Clear Threat

By Erik Assadourian

A hundred millennia from now, perhaps a new civilization will have arisen atop the remains of the civilization we now know. And as this new society explores the land and its secrets, at the base of what we call Yucca Mountain, Nevada, it may stumble on artifacts that warn—in as universal a way as was conceivable to the humans that lived before—that those who find these markers should *stay away*.

Why? Because under that mountain, there will be some 100,000 tons of still-active nuclear waste sitting in barrels—and by then, even in the absence of any geological upheavals in the intervening thousand centuries, about 1 percent of that lethal material (as now estimated by the U.S. Department of Energy) will have leaked out and may have entered the groundwater, creating a spreading plume of contamination.

Of course, we cannot predict what will happen geologically, biologically, or sociologically in 100,000 years. But atomic waste is collecting at 131 minimally secured sites in the United States—and many others around the world—and the need to contain the threat continues to mount.

In fact, we are finally coming to realize that securing nuclear waste is an essential step in improving environmental and global security. With the collapse of the Soviet Union, the control mechanisms that regulated its stockpiled nuclear waste and weapons of mass destruction (WMD) have withered. Between the 1.5 metric tons of weapons-grade plutonium that are generated each year by Russian nuclear power plants, the tactical nuclear weapons and radioisotope thermal generators that are easily transportable and poorly secured, and the thousands of underemployed weapons scientists, the threat nuclear materials pose to the world's people and environment has become undeniable.

Fortunately, at least in Russia, there is movement to secure WMD and component materials. In 1991, soon after the end of the Cold War, Russia agreed to allow the United States to help secure and decommission part of its arsenal. Under the leadership of U.S. Senators Sam Nunn and



Richard Lugar, the Cooperative Threat Reduction program was enacted, and over the course of a decade it has destroyed over 6,000 nuclear warheads, helped to increase security at 40 percent of the facilities housing nuclear materials, and employed tens of thousands of weapons scientists in peaceful pursuits.

More importantly, as Senator Lugar notes (see sidebar), there is great potential to expand this initiative multilaterally. That would increase the speed and effectiveness of the

program and help build the political cooperation needed to eventually phase out WMD, but at the same time would help prepare the global community for any eventuality of their ever being used.

While we may be able to secure these deadly materials in the short run, our civilization is still in its infancy. Governments come and go, empires rise and fall. How can we find a system to contain materials that will last 50 times longer than our recorded history? We don't even have materials that will last this long, except, of course, the ones we're trying to contain. The goal must be to avoid creating any more waste in the first place. Yet how do we do this when 17 percent of the world's electricity comes from nuclear power, using more than 65,000 tons of uranium per year?

Many governments have concluded that, contrary to the claims of nuclear industry advocates, nuclear power is not safe, economical, or pollution-free—and they are starting to phase out this hubristic technology. Belgium, which gets 58 percent of its energy from nuclear power, has introduced legislation that would phase out nuclear power by 2025. Nuclear power plants won't last forever; in the United States their initial licenses are for 40 years. Even with license extensions, if the other 31 nuclear countries were to agree to build no more reactors (and several have agreed already), we could be ushering in a nuclear-free world by mid-century. However, some governments have proposed new construction. In the United States, where no new reactor has been ordered in 25 years, the Energy Department in 2001 released

a report promoting the construction of at least one new plant by 2010 and an estimated 50 more by 2020.

While proponents of nuclear power argue that it is a cheap and clean alternative to fossil fuels because it does not produce air pollution, nuclear energy is not a viable alternative to renewable energy. Besides creating waste that remains lethal for millennia, nuclear power costs two to three times more than wind power (10-14 cents per kilowatthour, compared to 4-6 cents). It is also a massive environmental and security threat. In 2002, at the Davis-Besse power plant in Ohio, boric acid ate a hole through the 17-cm thick reactor vessel head. Just half a centimeter of stainless steel prevented the escape of pressurized coolant, which could have triggered a reactor meltdown. In addition, nuclear plants are often unsecured against terrorist attack. In January, 19 Greenpeace activists stormed the U.K.'s Sizewell power plant, scaling the reactor without resistance. The goal was simply to expose the plant's vulnerability, but if the intruders had been actual terrorists the result would have been cata-

strophic. Finally, nuclear materials have also been known to disappear, and not just in Russia; early this year, the Japanese government admitted that it could not account for 206 kilograms of plutonium—enough to make 30 to 40 bombs.

With the threat of climate change upon us, it is obvious that we need to move away from fossil fuels. But we also need to follow the example of Germany and reject the nuclear option in favor of renewable resources like wind and solar power. Germany only began a serious transition to renewables 10 years ago but is now the leading global producer of wind power. This industry has been an economic and ecological boon, generating clean and cheap energy *and* 40,000 jobs (compared to 38,000 in the entire German nuclear industry, which still produces six times the energy that wind energy does). And wind turbines and solar panels, which are decentralized and inert, make poor terrorist targets. If we are to secure our future, we must secure current stores of nuclear materials as well as ensure that we don't produce any more of them.

Richard Lugar, on Increasing Security by Expanding Nonproliferation

In 1991, Senator Sam Nunn and I pushed a bill through Congress that began a sustained American effort to assist states of the former Soviet Union in safeguarding and destroying their enormous stockpiles of weapons of mass destruction (WMD). Our argument was straightforward: with the Russian economy crumbling, the huge Soviet arsenal had to be secured, or weapons and materials of mass destruction inevitably would be stolen, sold, or diverted with disastrous consequences to U.S. national security.

Eleven years ago, when the Nunn-Lugar [Cooperative Threat Reduction] program was conceived, the terrorist threat was real, but vague. Now we live in an era when catastrophic terrorism using weapons of mass destruction is our foremost security concern. We must not only accelerate weapons dismantlement efforts in Russia, we must broaden our capability to address proliferation risks in other countries and build a global coalition to support such efforts.

On June 27, 2002, leaders of G-8 member states agreed to participate in a "Global Partnership Against the Spread of Weapons and Materials of Mass Destruction." The agreement pledges the United States to spend \$10 billion toward WMD dismantlement efforts over the next 10 years. Similarly it commits the other G-8 nations as a group to spend \$10 billion for the same purpose [the "10 Plus 10 Over 10" agreement]. If the agreement were fully implemented it would double the resources currently being expended on the broad range of Nunn-Lugar-style programs.

At a time when some U.S. allies and their populations are skeptical of military approaches to combating terrorism, the 10-Plus-10 formula offers a nonmilitary means through which they can have a profound impact on preventing catastrophic terrorism. Although 10-Plus-10 is

a G-8 initiative, it welcomes participation by other countries outside the G-8. If other states were to become involved, additional resources and expertise could be devoted to disarmament and a truly global coalition devoted to preventing the proliferation of weapons of mass destruction could be built. The agreement envisions that some projects may go beyond weapons dismantlement efforts to include counterterrorism, nuclear safety, and containing environmental damage.

The Nunn-Lugar program provides a model for international action and could coordinate assistance for those nations seeking help in securing or destroying weapons or dangerous materials. It would create international standards of accountability for protecting and handling nuclear materials and deadly pathogens. It would help organize international pressure on states to comply with those standards. Coalition members could also develop cooperative procedures for coming to the aid of victims of nuclear, biological, or chemical terrorism.

Our ultimate goal should be to build on the Nunn-Lugar success by constructing a global coalition to safeguard nuclear, chemical, or biological weapons and their component materials and technology. The real question is whether there exists sufficient political will to devote the requisite resources and attention to these programs. If we are to block terrorist acquisition of weapons of mass destruction, vision, statesmanship, and patience will be required over many years.

U.S. Senator Richard Lugar is Chairman of the U.S. Senate Committee on Foreign Relations. His full article can be read in the December 2002 issue of Arms Control Today available at www.armscontrol.org.