'Loose nukes' worry U.S.

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MOSCOW — In islands of secrecy across Russia, American specialists and American money are fitting locks and installing cameras, hardening walls, powering up databases and training guards in a vast, costly effort by one old foe to defend the weapons of another.

Before the Americans came to Moscow's Kurchatov Institute, home to 10 tons of weapons-grade uranium, a guard behind a lobby desk simply waved through scientists and technicians. Now the traffic is controlled by "man trap" entrance cages, surveillance video and radiation detectors.

Far to the east, at a former weapons complex beyond the Ural Mountains, hundreds of 1-ton concrete blocks are being positioned slowly over open receptacles holding weapons-grade plutonium — more U.S. dollars at work to foil nuclear thieves.

"Threat reduction," a historic U.S.-Russian effort that has ballooned to a $1 billion-a-year enterprise, is steadily locking down more of this country's "loose nukes," the warheads and bomb material whose security deteriorated in the disarray after the Soviet Union's collapse.

[Leaders of the Group of Eight nations announced at the end of their summit in the Canadian Rockies last week their agreement to spend $20 billion to help Russia decommission weapons of mass destruction, particularly plutonium stocks. Half the amount will come from the United States and $10 billion from other G-8 countries over 10 years.]

The new security is far from complete. Many doorways to plutonium and highly enriched uranium still lack detectors and cameras. More than half the 600-plus tons of Russian bomb material that isn't inside warheads still lacks even basic security upgrades such as improved locks, hardened windows and reliable inventories. All still depends on fallible humans.

Behind walls topped with barbed wire, Kurchatov Institute staff detected a critical flaw in the software of their new U.S. accounting system, one that stalled the computer inventory of their uranium for more than a year. The programming was making batches of bomb material "disappear" from the database list.

Simple human glitches, in the realm of nuclear arms, can
lead to catastrophe.

Bomb material, in fact, has been disappearing from the former Soviet nuclear complex, as seen in reported cases in which traffickers have been caught.

The most serious was the attempted theft in 1998 of 41 pounds of nuclear material, including weapons-grade uranium, from a Urals facility by two insiders conspiring with outsiders. It was probably enough to build a weapon. No information has emerged about ultimate buyers.

"They were caught before they got off the property," said Yuri G. Volodin, nonproliferation chief for the Russian nuclear regulatory agency GAN.

"Have serious losses occurred in which the material was not recovered? "This is sensitive information," Mr. Volodin said, "and I am not authorized to discuss such things."

Such things have been high on the discussion list worldwide since September 11, and the talk in Washington and Moscow is of quickening the effort to keep nuclear weapons out of unfriendly hands. The man in charge of the Russian nuclear arsenal, Col. Gen. Igor Valynkin, underlined the threat when he announced that twice last year terrorists — he didn't say who — had been detected reconnoitering Russian weapons-storage sites.

From small pilot projects in 1994, the U.S.-Russian security effort has evolved into two dozen major programs operated by the Defense, Energy and State departments and other U.S. agencies. The Energy Department's work alone accounted for some 2,000 U.S. travelers to Russia last year.

The Pentagon helps finance the Russians' dismantling of unneeded warheads, along with computerization, fence-building, alarm systems at warhead storage sites. It also is upgrading Russian nuclear transport with armored rail cars and trucks.

The Energy Department deals with the Atomic Energy Ministry's "loose" fissionable material: plutonium and uranium not in weapon form. The Americans finance security upgrades ranging from personal identification systems to the reinforcement of gates and walls at nuclear research institutes, fuel production facilities, naval fuel storehouses and other sites.

The U.S. State Department works, through subsidies and jobs programs, to keep ex-Soviet weapons specialists — financially strapped in a changed Russia — from accepting tempting job offers from foreign governments or others with nuclear ambitions.

The U.S.-Russian nuclear partnership, nonexistent a decade ago, now extends even to lighting American homes with a commodity once made to destroy them. Half of the low-enriched uranium consumed by U.S. nuclear power plants is a blended-down product of Russian bomb uranium.

U.S. Energy Department planners speak of securing all the civilian sites by 2008, or even earlier. But "there are a whole lot of 'ifs,'" said Linton Brooks, the department's deputy chief of nuclear security. One big "if" involves the future of U.S.-Russian relations.

A U.S.-Russian agreement in September cooled some friction over the Americans' demands for access to more sensitive locations, but disagreements persisted over a handful