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### **Arrest Shifts Focus To U.S. Sources Of Atomic Isotopes**

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Long before the May 8 arrest of Abdullah al Muhajir, the U.S. government concluded that Osama bin Laden controls enough cesium, strontium or cobalt to mount a radiological attack in the United States. The problem for al Qaeda, analysts believed, was reaching America with the required crude device.

Yesterday's disclosures about al Muhajir, accused of conspiracy to build and detonate such a "dirty bomb," came amid a shift in thinking about the locus of greatest risk. Instead of smuggling in radioactive contaminants, counterterrorist sources said, al Qaeda may be planning to buy or steal them here.

The U.S. intelligence community, knowledgeable officials said, believes that bin Laden's modest cache of radioactive metals almost certainly remains in south and central Asia. No sign of the nuclear materials has been found by U.S. forces in Afghanistan, and analysts lean increasingly toward the view that bin Laden is unlikely to risk transporting such a scarce and valuable resource across U.S. borders.

Counterterrorist officials said, after al Muhajir's arrest was announced yesterday, that they are focusing their investigation on the theory that his plans relied on a domestic source of nuclear isotopes. A dirty bomb, known among specialists as a "radiological dispersion device," would use conventional explosives to fling those isotopes in an airborne plume of radioactive dust.

Because a dirty bomb's greatest impact is terror, specialists in and out of government said even small quantities of radioactive metal would serve al Qaeda's aim.

"It is much more likely they will acquire them in the United States if they want to use them here," said a senior official familiar with the analysis. "They will try to obtain them locally."

That assessment marks a significant shift in thinking about a threat the U.S. government has taken seriously for years. Most of the emphasis before now has been on the unraveling of the vast nuclear complex, civilian and military, of the

former Soviet Union. Al Qaeda is known to have made substantial efforts to buy black market isotopes there.

For at least a year, government specialists have believed that those efforts succeeded. That consensus emerged months before Sept. 11, when four dozen intelligence analysts converged on a classified facility in Chantilly, just down Lee Road from the National Reconnaissance Office.

From early morning until late that night, the unusual gathering staged what one participant called a deadly serious "analytical game." Conferees in the Top Secret/Codeword exercise divided into two groups. The first made the strongest case it could, from evidence in hand, that bin Laden possessed the makings of a dirty bomb -- or worse, a device capable of producing an atomic detonation. The second group rebutted.

The doubters, officials said, did not convince themselves with any confidence. Even those who thought it improbable that al Qaeda had an atomic bomb acknowledged that the evidence did not rule it out. And most agreed that bin Laden's organization had the wherewithal to build a radiological weapon.

After Sept. 11, The Washington Post has reported, the Bush administration rushed sophisticated sensors -- neutron flux detectors and gamma ray detectors -- to ports of entry and choke points around major targets such as Washington and New York. At the time, the Customs Service fielded about 4,000 pager-sized "personal radiation detectors" for use by inspectors.

President Bush also placed Delta Force, the nation's elite commando unit, on standby to seize control of nuclear materials that the sensors might detect. Although far from an impermeable cordon, the new deployments increased the risk to al Qaeda that a dirty bomb might be discovered before it could be used.

The administration continues to press the three national laboratories, led by the NIS-6 Division at Los Alamos, N.M., to address what one Energy Department report called "shortcomings in the ability of [detection] equipment to locate the target materials which if known by adversaries could be used to defeat the search equipment and/or procedures." Crash research and development programs include the use of neutron generators to "interrogate" suspicious objects and other technologies for long-range detection of alpha particles.

These defenses against the external threat reflect a history in which the most serious known breaches of nuclear security -- involving materials enriched for use in nuclear weapons, or large quantities of lesser isotopes -- have taken place overseas.

The National Intelligence Council, an umbrella organization of interagency analysts, reported to Congress in February that "weapons-grade and weapons-usable nuclear materials have been stolen from some Russian institutes" at least four times from 1992 to 1999. Beyond that, the report said, "we assess that undetected smuggling has occurred."

Hundreds of thefts have been reported of less threatening nuclear byproducts, incapable of atomic detonation but harmfully radioactive nonetheless. In November 1995, Chechen rebels demonstrated the risks involved when they placed a 33-pound package containing cesium, wrapped in yellow paper, on a bench in Moscow's Izmailovo Park. There were no explosives, but Chechen rebel field commander Shamil Basayev said he had enough materials left to cause "several mini-Chernobyls."

Two close calls overseas were also serious. On May 25, 1999, a Bulgarian inspector -- trained and equipped by U.S. Customs -- discovered 10 grams of weapons-grade uranium in the trunk of a Toyota sedan crossing the Danube River. And in March 2000, a 23-ton truckload of metals arrived at the Uzbek border from Kazakhstan with gamma rays pouring out of it at 100 times the permitted limit.

Plutonium and weapons-grade uranium are thought to be well secured in the United States, but that is not true of the lower-grade nuclear materials required for a dirty bomb.

Thousands of private companies and universities use cesium, strontium, cobalt or americium to treat cancer patients, irradiate food against harmful microbes, sterilize equipment, monitor the operation of oil wells and inspect welding seams. The quantities involved range from tiny traces of americium in smoke detectors to thick rods of cobalt, each a foot long, that are used by the score in a single food processing plant.

The Nuclear Regulatory Commission reported last month that U.S. companies have lost track of nearly 1,500 such radioactive parts since 1996, and more than half were never recovered. Up to 30,000 radioactive parts are believed to have been abandoned or thrown away, according to an Environmental Protection Agency estimate.

Of the thousands of nuclear sources still in use, or decommissioned to known storage sites, many are thought to be vulnerable to theft or black market sale. And few hospitals or food processing plants are secure enough to withstand an armed attack by people intent on seizing the materials by force.

Most of the lost and stolen items generate small amounts of radioactivity, but some are potent enough to be used in a dirty bomb.

As recently as March, an industrial gauge with a significant quantity of cesium turned up at a scrap-metal plant near Hertford, N.C., where someone had accidentally discarded it. That find led to the recovery of at least three other gauges that had been thrown away by a company in Maryland.

Henry Kelly, a physicist who directs the Federation of American Scientists, testified before the Senate Foreign Relations Committee that the cesium in the Hertford incident alone could contaminate "a swath about one mile long covering an area of 40 city blocks." He made the crucial, and controversial, assumption that a terrorist could mill the cesium into fine particles and disperse it efficiently with 10 pounds of TNT. "If the device was detonated at the National Gallery of Art," he said, "the Capitol, Supreme Court and Library of Congress would exceed EPA contamination limits and might have to be abandoned for decades."

More worrisome to regulators was a 1998 incident in which thieves stole 19 tubes of medical cesium from a hospital in Greensboro, N.C., a crime investigators believe was committed with inside help. Police scoured the entire region with radiation-sensing aircraft but found no trace of the cesium. To this day, authorities have no idea where the material went, said Johnnie James, radiation emergency coordinator for North Carolina's Radiation Protection Section.

The biggest obstacle to handling industrial cesium is the same intense radiation that makes it useful in a bomb, said Arjun Makhijani, a nuclear-trained engineer and president of the Institute for Energy and Environmental Research in Takoma Park.

"It's not difficult to get a hold of this stuff, but if they don't know what they are doing, they could easily kill themselves," Makhijani said.

Until the recent turnabout by analysts, the U.S. government gave only modest attention to the risk that terrorists would build a dirty bomb domestically.

"Since September 11, there has been no urgency about materials accounting and reporting -- and this should Priority No. 1," Makhijani said.

Staff writer Joby Warrick contributed to this report.

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