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BRIEFING

# Aum Shinrikyo, Al Qaeda, and the Kinshasa Reactor

## Implications of Three Case Studies for Combating Nuclear Terrorism

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# SUMMARY

Even before the 9/11 attacks on the United States, national security officials had grown increasingly concerned about the potential for terrorists to acquire unconventional weapons or devices. Denying terrorists access to nuclear materials and components has been a particularly urgent priority, given the enormously destructive potential of terrorists armed with a nuclear weapon or an improvised nuclear device. To provide an empirical basis for policymaking, this documented briefing explores attempts by nonstate actors to acquire nuclear materials and to fabricate nuclear systems.

Three cases were selected for analysis. Although other terrorist groups in the past have shown interest in acquiring nuclear materials and devices, the two groups examined in this study, Aum Shinrikyo and al Qaeda, have demonstrated a commitment unmatched by other organizations. In addition, a substantial body of open-source material was available, although some of it was unreliable and contradictory, making absolute judgments impossible. The case of the disappearance of nuclear fuel rods from a reactor in Zaire illustrates what might be termed the "supply side" of the nuclear market and illustrates the pathways that terrorists or criminals might follow to obtain nuclear material. As with the two other cases explored here, open source material was available, although in many instances this information provided only a fragmentary and tentative account.

Beginning in the early 1990s, Aum, a religious cult with an apocalyptic ideology, recruited scientists and engineers to help the group acquire chemical, biological, and nuclear weapons. Aum identified Russia as a potential source of nuclear weapons, and cult members made numerous overtures to senior officials and scientists. But despite these entreaties, Aum was unable to purchase a nuclear weapon. As a result, Aum chose to focus on building rather than buying a nuclear weapon. Group members investigated the mining of uranium ore in Australia and used the Internet to glean sensitive information on nuclear facilities in Russia, the People's Republic of China, South Korea, and elsewhere.

Fortunately, none of these efforts bore fruit. This study suggests that two factors worked against Aum's nuclear acquisition program. First, the technical challenges associated with building a nuclear weapon became apparent to the group's leadership, which chose instead to devote its ample financial and other resources to acquiring chemical weapons, such

as the nerve agent sarin, which Aum used in its 1995 attack on the Tokyo subway system. Second, despite the reportedly lax security in Russian nuclear facilities and Aum's high-level contacts in the government, Russian officials were unwilling to provide the cult with what it wanted (see page 21).

The second case study examines al Qaeda's nuclear activities. Like Aum, al Qaeda had the motivation, financial means, and physical security to pursue an acquisition program. And as with Aum, al Qaeda followed a two-track strategy. First, in the Sudan during the mid-1990s, al Qaeda tried to obtain nuclear materials that could be used to make a bomb. However, the group fell victim to scams involving "Red Mercury" and radiological waste.

In Afghanistan, under the protection of the Taliban, al Qaeda began a more ambitious acquisition effort that included consultations with Pakistani civilian nuclear scientists. Yet documents recovered in Kabul and elsewhere during and after the allied invasion in 2001 suggest that while al Qaeda's interest was high, it made little progress in terms of designing or fabricating a nuclear system. Al Qaeda may have also attempted to purchase weapons (including so-called suitcase nukes) from Russia and elsewhere, but here too the open-source record suggests that al Qaeda was unsuccessful. The study suggests several reasons for al Qaeda's failure: Nuclear material may be more difficult to obtain than al Qaeda anticipated; building a nuclear device is a formidable technical challenge; and Russian nuclear systems may be more secure than has sometimes been alleged (see pages 47–51).

The third case study examines the disappearance of two reactor rods that had been stored at a small research reactor in Kinshasa. The two rods vanished during the late 1970s and were unaccounted for over the next two decades. The rods, which contained small amounts of low-enriched uranium, would have been extremely difficult to use in a nuclear device. But during the late 1990s, an Italian smuggling ring, which had obtained one of the rods, believed that there might be buyers for the illicit material. The ring, which was linked to Italian organized crime, found buyers for one of the rods. The purchasers were in fact Italian undercover law enforcement agents who ensnared the smugglers in what became known as Operation Gamma. However, many questions about the nuclear rods remain unanswered. For example, how did the Italian ring obtain the rod? What happened to the second rod? Why didn't the International Atomic Energy Agency (IAEA) mount a vigorous search for the rods after they first went missing? (See pages 66–67.)

Looking across the three case studies, this documented briefing concludes with a set of observations. First, access to significant resources, including the sanctuary of a state, will not guarantee the success of a nonstate actor's nuclear acquisition effort. Second, even sophisticated terrorists searching for nuclear material have been victims of scams. Third, Russian officials appear to have been less corrupt, and Russian nuclear materials and expertise more secure, than many analysts in the West have alleged. Fourth, despite inspections and safeguards, the IAEA failed to prevent the loss of reactor fuel. Finally, the study suggests that strict controls on nuclear weapons, materials, and expertise will reduce opportunities for terrorists to acquire these resources (see pages 69–70).