

# SCIENTIFIC AMERICAN™

## Detecting Nuclear Smuggling

**Radiation monitors at U.S. ports cannot reliably detect highly enriched uranium, which onshore terrorists could assemble into a nuclear bomb**

By Thomas B. Cochran and Matthew G. McKinzie | Monday, March 24, 2008 |



Customs inspectors at a pier in New York City send a sealed cargo container just taken off a ship from Istanbul through a radiation scanner. A dozen new tractors seem to be inside. Although the detector senses no radiation, the inspectors open the container anyway. Their handheld units show no radiation either, so they allow the container to leave. A private hauler drives it to a small Midwestern city. There terrorist cell members remove what was their final shipment of highly enriched uranium, concealed as 10 metal washers in the tractor engines, together weighing two kilograms. Months later an improvised nuclear device with a yield of one kiloton is detonated in Los Angeles. The blast, fire and airborne radioactivity kill more than 100,000 people. Virtually all shipping into the U.S. is halted, precipitating a financial crisis. Military operations commence in the Middle East after forensics and intelligence efforts trace the plot to cells in Pakistan and Iran.