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Editor's Note

The first two articles in this issue seek to estimate quantities of fissile material—plutonium and highly enriched uranium—that exist in the world today, and to gauge how these stocks might grow in the future.

The first article, by Alex Glaser and Zia Mian, presents estimates of global and national stockpiles of these materials, including for use in weapons, non-weapon military (naval) uses, and civilian purposes. The article is based on the section for the 2008 *Global Fissile Material Report* by the International Panel on Fissile Materials done by the authors. At present, the global stockpile of highly enriched uranium is estimated at between roughly 1500–2000 metric tons; and the global stock of separated plutonium at about 500 metric tons, divided almost evenly between weapon and civilian. The article highlights the growing significance of the naval and civilian stocks as weapon stocks are drawn down.

The next article, by R. Rajaraman, focuses on India and the potential of India to produce increasing quantities of plutonium and highly enriched uranium for weapons in the future, with particular emphasis on how India could exploit its current and growing stocks of reactor-grade plutonium. Included in such exploitation could be the use of reactor-grade plutonium to fuel fast breeder reactors to produce weapon-grade plutonium in the blankets.

The third article, by Ashwin Kumar and M. V. Ramana, further spotlights the Indian fast breeder reactor program, this time from the vantage point of safety. The article raises some concerns on the design choices that the reactor developers have made; and it examines the energy that could be released in a severe accident.

The final article in this issue, by R. Scott Kemp, provides still another approach to tackling the issues raised by a proliferation of uranium centrifuge enrichment plants, issues that the journal has highlighted in past articles, including two in the last volume. Given that the direct detection of a clandestine centrifuge plant will be difficult, the author here looks at the possibility of looking instead at facilities that produce uranium feedstock for the centrifuges, uranium hexafluoride. He suggests that it might be possible to detect aerosols released from such a facility through atmospheric sampling.