

to be assured about the long-term prospects of the programme. As well and until persuaded otherwise by the Russian side, a skeptical attitude on matters of nuclear safety and environmental protection is appropriate in structuring donor choices among alternative approaches to disposition.

To keep things simple, we might think in terms of four criteria: fewer, faster, newer, and foreign. The fewer of the several steps of disposition that are taken in Russia, the better owing to the diminished likelihood of something going wrong. There is nothing discriminatory in this: a similar criterion would apply to any country faced with risk in hosting a major multilateral venture. Secondly, assuming that the work of disposition conforms to appropriate standards, the less time that's taken at it, the less the opportunity for accident and misadventure. Third, given the present state of Russian nuclear technology and regulatory practice, the newer the technology and the standards to which it must conform, the greater the assurance that disposition will not be met with major safety and environmental problems. Where "foreign" is concerned, the criterion has two aspects. On the one hand, the more of the disposition process that's done outside of Russia the better, since nuclear safety and environmental requirements may be looked after better in richer jurisdictions elsewhere. And by the same token, whatever the portion of the process that's done within Russia, the more vigorous the foreign participation, the better the outlook for safety and the environment.

Measured by these standards, export-only (4) is the best of the alternative approaches suggested by the United States and the base case scenario or existing Agreement (1) is the worst.

Export-only wins out on all criteria. Only two phases of the disposition process, conversion and MOX fuel fabrication, would be done in Russia (although spent fuel would no doubt have to be returned). Substantial foreign reactor capacity would be harnessed, thereby significantly shortening the mission of conversion and fuel manufacture in Russia, and narrowing the window for accident. The technology used in Russia, essentially for fuel fabrication, would be new and therefore more likely to be safe than when existing Russian capability was also adapted to new needs. Finally, substantial foreign participation in the processing of WGPu within as well as outside Russia would make for more sustainable practices and standards than could be had with approaches to disposition that relied primarily on autonomous Russian activity.

Comparatively speaking, the Agreement is poorly crafted when it comes to nuclear safety and the environment. All phases of the disposition process, and the vulnerabilities which accompany them, occur within Russia. Requiring a relatively lengthy period to complete, the process would also hold the window open longer for things to go wrong. As well, it would rely heavily on existing Russian reactors. This includes the BN-600, to which Minatom gives a clean bill of health (Minatom, 2000), and which others view as the site of numerous sodium fires (Yablokov, 2000). Foreign participation could however yield some safety and environmental benefits in fuel fabrication and reactor conversion. Moving to four tonnes per year, either in Russia or with half exported, does not alter the picture in a major way, particularly when 2+2 exported is not greatly cost-effective (Joint Working Group, December 2001). Four tonnes annually in Russia nevertheless seems more risky than 2+2.

Accordingly, the Agreement needs strengthening for greater nuclear safety and environmental protection and, thus, for greater long-term sustainability. Reliance on an international management entity to intensify foreign participation in all phases of the disposition