

this is not what they want to do, why are the donors holding to the Agreement and its potential to help finance Russia's long-term transition to a plutonium economy? Some irresolution is to be expected in an exceedingly complex negotiation. But this is too much. It needs to be reduced. Otherwise, the core purposes of the Multilateral Agreement and the ensuing disposition programme will be opened to challenge the moment anything goes seriously wrong.

How then might irreversibility be bolstered, if not secured, against Russian contravention with civil plutonium? Three approaches warrant attention. In considering them we start to close in on a discussion of alternative strategies of disposition.

First comes burn-down. Under this approach all concerned would get off the spent fuel standard and part with the goal of "disposition." Instead, the aim would be to rid the world of plutonium through irreversible disposal. This would be accomplished through the development and use of an advanced reactor or reactors that not only burned plutonium down to nothing, but did the same for all spent fuel and nuclear waste. In effect, U.S. variation (3) listed previously would replace the base case scenario (1) and all other variants, but with the emphasis now entirely on burn-down. The whole programme would be focussed on and done in Russia by an international consortium. For as long as it took to do the job (i.e., for as long as uranium fuel was globally economic), large amounts of electricity would be produced. First disposals might aim to begin by 2050. Until then, Russia and the United States would disassemble, convert, and store progressively larger amounts of WGPu under IAEA inspection, as per item (5) on the U.S. list. All reprocessing would cease in Russia, the United States would not begin it, and the two countries which led the way into reliance on plutonium would lead the way out.

Second, we might hold to B&B and base case scenario (1) in the belief that disposition to the spent-fuel standard does indeed provide an adequate measure of physical irreversibility in taking WGPu out of circulation. Under the Agreement, Minatom's plans to increase the circulation of civil plutonium in Russia would be effectively deferred and made conditional on a commercial demand which itself may not materialize. Indeed, B&B could proceed on the donors' assumption that Minatom's strategy for the first half of the twenty-first century is simply unworkable. To speed things along, international cooperation in the development of a new reactor in Russia, as per variant (3), could be folded in at some point, but this would definitely be a thermal reactor and not a breeder. The export-all scenario (4), on the other hand, would definitely be excluded on the grounds of creating a significant new income stream which Minatom could use to accelerate the acquisition of breeders. All in all, the base case scenario would be deemed sufficient in meeting the needs of irreversibility as a physical outcome.

Finally, it is possible to imagine breed-up as a third strategy. In this case it could be argued that civil plutonium in Russia, as anywhere, presents no problem for international peace and security as long as it is properly safeguarded. Quite simply, there would be no contradiction or tension between the reduction of WGPu and the accumulation of RGPu. Nor would there be any Russian contravention or threat to the irreversibility of disposition as a process. The irreversibility mission for WGPu would be spent-fuel disposition and nothing more. In principle, thermal and breeder reactors could both do the job. In practice, breeders would be judged far superior in their ability to heighten the rate of disposition, the interest of the industry in Russia, and international investment and participation including lease or purchase of Russian utilities. Accordingly, breed-up points to the creation of an international consortium to build the BN-800 or an equivalent (and certainly not a thermal reactor), as suggested by alternative approach (3).