

detection of the diversion to non-peaceful purposes of a 'significant quantity' of nuclear material.¹³ Traditional safeguards focus on accountancy and control of nuclear materials, through which the IAEA confirms that quantities of declared nuclear materials remain at safeguarded sites or can otherwise be accounted for. In addition to nuclear accountancy, the Agency uses routine on-site inspections (OSIs) and passive 'containment and surveillance' measures such as tamper-resistant seals and surveillance cameras. States parties recognised as nuclear weapon states (NWS) by the NPT (China, France, Russia, the UK and US) are not required to accept comprehensive safeguards, but all have made 'voluntary offers', accepting safeguards on certain facilities as a token of goodwill.

Shortcomings of classical safeguards

When agreed in the 1970s classical safeguards were considered an adequate political compromise in balancing intrusiveness and comprehensiveness with cost and respect for national sovereignty. While never regarded as foolproof, the passage of time has revealed serious shortcomings. The most fundamental was that the IAEA could only inspect or monitor materials and facilities declared to it by states parties, allowing would-be proliferators to develop substantial undeclared nuclear capabilities undetected, either co-located with declared facilities or completely separately. While a so-called special inspection (the equivalent of a 'challenge' inspection in other disarmament regimes) could be requested in cases where there was strong suspicion of malfeasance, political expediency rendered these impossible to invoke. The Board of Governors has done so only once, in 1993, in regard to North Korea, which refused to cooperate.

A second limitation is that nuclear safeguards permit states to assemble many of the elements of a future nuclear weapons programme, such as a uranium enrichment capability, as long as they declare them to be for peaceful purposes and subject them to safeguards. Having mastered all of the relevant technologies, a state can legally withdraw from the NPT on three months' notice and begin to produce nuclear weapons perfectly legally. This is what it is feared Iran is currently attempting to do.

A third weakness of classical safeguards stemmed from the assumption that the intensity of verification of any state party should be determined by the size of its nuclear industry, not by the likelihood of its non-compliance. This has led to the expenditure of considerable resources on verifying states with large, well-developed nuclear industries, like Canada, that are not of proliferation concern, while distracting attention from those that are, such as Iran.

Strengthened safeguards

While there had been debates about strengthening safeguards since their inception, the greatest catalyst of reform was the discovery after the 1990 Gulf War of just how close Iraq had come to acquiring nuclear weapons—despite nuclear safeguards. In reaction, in December 1993 the Board of Governors launched the '93+2' programme, so-called because it was expected to be completed within two years. Part 1 involved enhancements that could be initiated by the IAEA within its existing mandate and legal authority, while Part 2 comprised measures that would be possible only

¹³ The IAEA defines a 'significant quantity' as eight kilograms of plutonium and uranium-233, 25 kilograms of uranium-235 enriched to 20 per cent or more, 75 kilograms of uranium-235 enriched to less than 20 per cent, 10 tonnes of natural uranium and 20 tonnes of depleted uranium and thorium. See IAEA, *The Evolution of IAEA Safeguards*, International Nuclear Verification Series, no. 2, Vienna, 1998, p. 53.