

Nuclear Materials and Nuclear Security in India: A Brief Overview

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Abstract : Nuclear security is the 'prevention and detection of, and response to unauthorised removal, sabotage, unauthorised access, illegal transfer or other malicious acts involving nuclear or radiological material or their associated facilities.' Ever since the end of Cold War, nuclear materials security has remained a concern for global security. However, with the increase in terrorist attacks not just in India especially, security of nuclear materials remains a priority. Therefore, India has made continued efforts to tighten its security on nuclear materials to prevent nuclear theft and radiological terrorism. Nuclear security is different from nuclear safety. Physical security is also a serious concern and India had been careful of the physical security of its nuclear materials. This is more so important since India is expanding its nuclear power capability to generate electricity for economic development. As India targets 60,000 MW of electricity production by 2030, it has a range of reactors to help it achieve its goal. These include indigenous Pressurised Heavy Water Reactors, now standardized at 700 MW per reactor Light Water Reactors, and the indigenous Fast Breeder Reactors that can generate more fuel for the future and enable the country to utilise its abundant thorium resource. Nuclear materials security can be enhanced through two important ways. One is through proliferation resistant technologies and diplomatic efforts to take non proliferation initiatives. The other is by developing technical means to prevent any leakage in nuclear materials in the hands of asymmetric organisations. New Delhi has already implemented IAEA Safeguards on their civilian nuclear installations. Moreover, the IAEA Additional Protocol has also been ratified by India in order to enhance its transparency of nuclear material and strengthen nuclear security. India is a party to the IAEA Conventions on Nuclear Safety and Security, and in particular the 1980 Convention on the Physical Protection of Nuclear Material and its amendment in 2005, Code of Conduct in Safety and Security of Radioactive Sources, 2006 which enables the country to provide for the highest international standards on nuclear and radiological safety and security. India's nuclear security approach is driven by five key components: Governance, Nuclear Security Practice and Culture, Institutions, Technology and International Cooperation. However, there is still scope for further improvements to strengthen nuclear materials and nuclear security. The NTI Report, 'India's improvement reflects its first contribution to the IAEA Nuclear Security Fund etc. in the future, India's nuclear materials security conditions could be further improved by strengthening its laws and regulations for security and control of materials, particularly for control and accounting of materials, mitigating the insider threat, and for the physical security of materials during transport. India's nuclear materials security conditions also remain adversely affected due to its continued increase in its quantities of nuclear material, and high levels of corruption among public officials.' This paper would study briefly the progress made by India in nuclear and nuclear material security and the step ahead for India to further strengthen this.

Keywords : India, nuclear security, nuclear materials, non proliferation

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