

Nuclear Safety and Security

by Aditya Singh

Nuclear safety means measures taken by private companies or the government in handling nuclear and radioactive materials. It requires proper transportation, shifting and mitigating nuclear objects. The International Atomic Energy Agency (IAEA) defines nuclear security as "the prevention and detection of and response to, theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances or their associated facilities".

Nuclear safety is "the achievement of proper operating conditions, prevention of accidents or mitigation of accident consequences, resulting in protection of workers, the public and the environment from undue radiation hazards".

Nuclear safety and nuclear security are terms that share a common goal of protecting the environment (including humans & their property) from any mishap caused by nuclear and/or radioactive agents. While the accidents like Three Mile Island, Chernobyl and Fukushima raised critical safety concerns, the terrorist attacks of 9/11 and other incidences of terrorism have brought the issue of nuclear power plant security to the fore. There have been enormous steps taken by countries for developing an understanding of nuclear safety and security independently. Evidently, nuclear safety & nuclear security, though two distinct aspects of a nation's nuclear policy, are interconnected as they share a range of common issues. Therefore it is important that the relationship between these two be developed into a cohesive relationship for overall stability & security.

Globally, the Nuclear Security Summit (NSS) initiative, first held in 2010, was an international effort to curb down the use of nuclear weapons and nuclear plants. The summit was organised to bring focused global attention to nuclear arms and nuclear security. This summit was not held under the umbrella of the United Nations. Instead, it was called by the President of the United States of

America and the heads of nearly 47 countries had attended the summit. In succession to it, three such other summits have been held in 2012, 2014 and 2016 with the same goal in mind. Therefore, it is the need of the hour to work cooperatively as an international community to

advance nuclear security.

Nuclear weapons are the most dangerous weapons possessed by mankind. One can destroy a whole city, potentially killing millions, destroying the natural habitat and paralysing the future generation, as seen in the aftermath of the Hiroshima & Nagasaki nuclear bombing by the USA towards the end of the 2nd World War. The dangers from such weapons arise from their very existence. Many treaties & pacts have been signed in history to minimize the use of nuclear weapons, such as the Non-Proliferation Treaty (NPT)- a landmark international treaty whose objective is to prevent the use of nuclear arsenals.

Nuclear power is crucial in many countries' development goals, including India, as renewable energy sources such as wind and solar energy are not sufficient to meet energy requirements as well as global climate goals. Nuclear power presents India with the opportunity to enhance its energy security and help reduce global CO₂ emissions and minimise global warming and climate change. Nuclear safety should be the foremost concern of all the countries around the globe. Nuclear weapons can change the world-order and destroy flora and fauna within a few seconds. The government should actively play a role in minimising the use of nuclear reactors. Proper Standard Operating Procedures (SOPs) should be laid down for nuclear plants. A nuclear plant emits harmful gases and other substances which pose a great threat to human life.

