

NON-NUCLEAR PROLIFERATION

The 21st century is characterized by a complex international scenario that makes it difficult to forecast its repercussions in the medium and long term. Globalization and asymmetric threats contribute to diversify adversaries and motives that could lead to inexorable conflicts in global security.

WEAPONS OF MASS DESTRUCTION (CRBN)	
COLD WAR 1948-1991	POST COLD WAR 1991-
STATE ACTORS	NON-STATE ACTORS Crime organizations Terrorist groups Cult fanatical groups Other entities
CONTROL ON CBN WEAPONS Treaty on Non Proliferation of Nuclear Weapons Chemical Weapons Convention Biological and Toxin Weapons Convention	UNCONTROLLED ATTEMPTS TO ACQUISITION Smuggling Theft Underground Market
Nuclear Containment Nuclear Deterrence	Threat dispersion
GLOBAL STRATEGIC CONTROL	NEW PROLIFERATION STATUS

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NUCLEAR AND RADIOLOGICAL TERRORISM

Nuclear terrorism is an evil application of nuclear energy. It could be perpetrated using any of the following means: 1) by crude or improvised nuclear devices (INDs); 2) by radiological

dispersion devices (RDDs), also known as dirty or radioactive bombs; or 3) by attack on nuclear facilities (ANF).

The cover features logos for IAEA (International Atomic Energy Agency), IFN-GV, and the Spanish Government (GOBIERNO DE ESPAÑA, MINISTERIO DE CIENCIA). The title is prominently displayed in white text on a blue background with a stylized atomic symbol. Below the title, the authors' names and affiliation are listed, along with the event location and dates.

**RADIOLOGICAL AND NUCLEAR SECURITY
CULTURE IN THE 21st CENTURY –
*Perspectives on Application to Detection
Operations***

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Professor José Manuel Perlado Martín

Instituto de Fusión Nuclear Guillermo Velarde - UPM
SPAIN

Panama City, Panama
28 October to 1 November 2019

The cover is dark blue with white and yellow text. It includes the IFN-GV logo and the Industrial Union of Marine Workers logo. The text describes the forum's focus on combating terrorism and nuclear security threats.

**THE INTER-UNIVERSITY CENTER FOR TERRORISM STUDIES
21st Annual Ambassadors' Forum:**

**COMBATING TERRORISM AMID COVID-19: REVIEW OF 2020 AND OUTLOOK
FOR 2021 AND BEYOND**

**NEW PARADIGMS IN NUCLEAR SECURITY
THREATS IN THE 21st CENTURY**

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General Secretary - Instituto de Fusión Nuclear Guillermo Velarde (IFN GV)

The cover features a background image of a sunset or sunrise over a body of water with ships. The text is overlaid on the left side. It includes the title, author's name, and affiliation.

A 21st Century Perspective on Nuclear Proliferation and Nuclear Terrorism

By Prof. Natividad Carpintero-Santamaría, General Secretary of the Instituto de Fusión Nuclear "Guillermo Velarde"

Improvised Nuclear Devices (INDs) are atomic bombs that due to a deficient design, or the materials used or/and a poor-quality control of their components, they produce when exploding a yield lower than 1 kiloton of energy. The INDs can be made of uranium or plutonium but the project, the components, the quality control and their functioning are radically different. The uranium bombs would be the most suitable potential bombs for terrorism because they can be designed and made under a low-medium-technology profile. In this type of bombs, only from 1% to 5% of the WGU undergoes fission. However, the probability to reach the nominal yield is big. They can also be disassembled, and their components be easily transported by means of clandestine entrances in a country (private airports and ports, etc). It is unlikely that terrorist groups today could develop and manage the substantial infrastructure that would be required to produce enriched uranium or plutonium for weapons. However, nuclear weapons and weapon materials could be stolen by terrorists either from storage or during transportation.

NUCLEAR SECURITY

Nuclear security implies 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. (IAEA).

ILLEGAL TRAFFICKING OF RN MATERIALS/AGENTS

Covert acquisition of dual-use materials, both tangible and intangible, through illicit trafficking is produced by applying a series of techniques and strategies that are becoming increasingly sophisticated. Combating illicit trafficking of RN materials is an arduous task due to the opacity of these camouflaged operations; indirect transmission; diversification of suppliers, etc. The development of new technologies for transport and communication of goods via cyberspace, not only substantially facilitates the flow of RN illegal trade, but also enhances security for traffickers.

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