

Nuclear Security: Countering the Threat From States and Non-State Actors

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DAVID BERNELL; BEN WICKIZER; AND MEREDITH BOWERS

OREGON STATE UNIVERSITY
CORVALLIS, OR



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Introduction

David Bernell

The danger posed by nuclear weapons and fissile materials is ever present. The end of the Cold War and the significant reduction in the size of Russian and U.S. nuclear stockpiles did not change this fact of life. There are now nine states that possess nuclear weapons – the United States, Russia, the United Kingdom, France, China, Israel, India, Pakistan, and North Korea – and the number of nuclear weapons in the world in 2019 is estimated to be almost 14,000. In addition, the production of highly-enriched uranium and plutonium continues in several places, while more than 440 civilian nuclear facilities around the world are in operation, posing their own particular risks. When one also considers that non-state actors constitute a significant global danger and the potential for nuclear terrorism, it is clear the need for nuclear security remains paramount. There is no other type of weapon that comes close to doing the level of damage that nuclear weapons can inflict.

At the same time, the use of nuclear technology has an important role in the world. One can make the case the nuclear weapons have helped to keep the peace among the world's major powers since 1945, making large-scale war unthinkable. Nuclear energy provides 10 percent of the world's electricity generation (20 percent in the United States), and newer, safer reactor designs offer the potential for even more. As the world battles the growing dangers of climate change, nuclear energy offers carbon-free, emissions-free electricity to replace fossil fuels. Nuclear technology has also provided significant advances in medicine, while also protecting agricultural production and food supplies. The benefits of nuclear technology have made themselves evident for decades, and for these reasons, the technology is not going away.

It is for this reason that a robust, reliable and effective system must be in place to ensure that the benefits of nuclear materials can be maintained while keeping the dangers at bay. This is what motivates governments, organizations and individuals around the world to control and perhaps eventually eliminate nuclear weapons and dangers they pose, while ensuring the security of fissile materials at civilian nuclear facilities.

This edited volume brings together a number of articles and books written on the subject of nuclear security to provide the reader with a broad and deep understanding of the many issues that surround the subject. It is divided into three parts, covering the challenges associated with nuclear security as it pertains to countries, non-state actors/terrorism, and civilian nuclear facilities. Each of these areas poses its own unique problems and challenges.

This book is part of an effort at Oregon State University to provide free educational materials to students, as the cost of textbooks has risen significantly and placed a growing financial burden on students. The volume includes books and articles that are open source and available to anyone via the internet, as well as links to copyrighted materials available to students at Oregon State University through the OSU Valley Library.

PART I

Nuclear Security and State Actors

Chapter I - The Problem of Nuclear Weapons

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Nuclear Security and Civilian Facilities

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- Bagchi, Alaknanda. "Conflicting Nationalisms: The Voice of the Subaltern in Mahasweta Devi's Bashai Tudu." *Tulsa Studies in Women's Literature*, vol. 15, no. 1, 1996, pp. 41-50.
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