



Nuclear Facilities and Terrorism

Alan J. Kuperman, Ph.D

NPPP Coordinator

Associate Professor

LBJ School of Public Affairs

University of Texas at Austin

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Implications of the Rokkasho Reprocessing Plant Operation
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The NPPP engages in research, debate, and public education to ensure that civilian applications of nuclear technology do not foster the spread of nuclear weapons to states or terrorist groups.

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Two Terrorist Threats at Rokkasho

- 1. Steal plutonium to manufacture nuclear weapons.
- 2. Attack spent fuel pools to inflict radiological sabotage.



Plutonium Amounts (kg) at Rokkasho

Planned Annual Extraction	8000
Diversion Detectable (95% confidence)	246
Amount Needed for Bomb	< 8



"Reactor Grade" Plutonium Can Produce Bomb Yields Like Nagasaki

"Subnational group using designs and technologies no more sophisticated than those used in first-generation nuclear weapons could build a nuclear weapon from reactor grade plutonium that would have an assured, reliable yield of one or a few kilotons (and a probable yield significantly higher than that)."

- U.S. Department of Energy, 1997



Terrorists Could Make Nuclear Weapons from Reactor-Grade Plutonium

"Such a device could be constructed by a group not previously engaged in designing or building nuclear weapons...Devices employing metal in a crude design could certainly be constructed so as to have nominal yields in the 10 kiloton range."

– J. Carson Mark, et al., "Can Terrorists Build Nuclear Weapons?," 1987



Radiological Sabotage Scenario

- 1. Terrorists attack spent fuel pools to breach structure, drain cooling water, and ignite fire e.g., using commercial aircraft as al-Qaeda did on Sept 11, 2001.
- 2. Fire damages spent fuel's cladding, allowing gaseous and aerosolized radioactive waste to escape from the damaged pool building.
- 3. Wind disperses radioactive material across much of Japan.

Rokkasho Attack Could Dwarf Fukushima Damage

- Rokkasho spent fuel pools have dozens of times more irradiated fuel than each Fukushima reactor core.
- At Fukushima, only a small fraction of the radioactive material in the fuel cores escaped from the reactors, yet METI estimated the damage at ¥21.5 trillion.
- Attacking Rokkasho's spent fuel pools might disperse much more radioactive material.

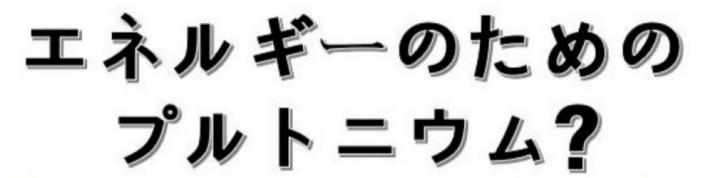
Lessons

- 1. Cancel commercial start of Rokkasho.
- 2. Transfer Rokkasho's spent fuel from pools to dry casks.



Plutonium for Energy?

https://sites.utexas.edu/prp-mox-2018-japanese



リンク イベント お問い合わせ

요약 한국어 English Version 中文版

[今、本は出版されています:"エネルギーのためのプルトニウム?"。無料のコピー(電子または紙)はこちらをクリックしてください。最初の章を日本語に翻訳]

[新しい記事が公開されました:「日本のプルトニウム政策が間違っている」. 記事は日本語に翻訳されています]







LBJ School of Public Affairs University of Texas at Austin PO Box Y Austin, TX 78713-8925

Tel: (512) 471-8245 Email: info@NPPP.org

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