



Preventing Acquisition by Terrorists of Radioactive Sources

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Introduction

The IAEA at ODUMUNC 49 has an opportunity to show how to lead global efforts to control nuclear material and prevent its acquisition by terrorists. No terrorist threat is as frightening as terrorist acquisition of nuclear weapons, or radioactive (fissile) material that could be used to poison whole cities. While nuclear stability may be maintained between states through deterrence, the threat of massive retaliation, terrorists armed with nuclear weapons or radioactive materials could be much harder to stop. Thus far, the burden to control nuclear material has been left to governmental organizations

within member states such as the U.S. Department of Energy's National Nuclear Security Administration¹ or Russia removing nuclear material from former Soviet Republics.²

RADIOLOGICAL TERRORISM - A GLOBAL POLICY CHALLENGE IN NEED OF URGENT ACTION

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The United Nations International Atomic Energy Agency (IAEA) currently provides mostly guidance on how to safely manage radioactive

¹ U.S. Department of Energy. "U.S. and Japan Remove All Highly Enriched Uranium from Additional Research Reactor—Two Years Ahead of Schedule." 10 April 2024.
<https://www.energy.gov/nnsa/articles/us-and-japan-remove-all-highly-enriched-uranium-additional-research-reactor-two-years>

² IAEA. "Kazakhstan removes Stockpile of Fresh High Enriched Uranium Research Reactor Fuel." 2 October 2014.
<https://www.iaea.org/newscenter/news/kazakhstan-removes-stockpile-fresh-high-enriched-uranium-research-reactor-fuel>

material, but there is no comprehensive agreement on how Member States should act.³

Without international agreement on how best to control fissile materials, radioactive Uranium, Plutonium and other materials that can be used for nuclear weapons or radioactive terrorism, everything ultimately is up to each individual Member State. The danger is the entire world becomes vulnerable to the country with the weakest control.

Background

Natural uranium is *inert*, consisting mostly of one isotope (U238) that cannot be used in a reactor or bomb. In its natural state, unpurified, it is harmless. Radioactive isotopes have to be concentrated or *enriched* or *reprocessed* into purer forms to be useful for weapons or terrorism.



A billet or slug of enriched uranium, a fissile material, for a fuel rod in a civilian nuclear power generating reactor.

³ IAEA. “Disused Sources.”

<https://www.iaea.org/topics/disused-sources>

⁴ United States Nuclear Regulatory Commission. “Source Material.” 6 July 2023.

<https://ww2.nrc.gov/materials/types/srcmaterial>

⁵ United States Nuclear Regulatory Commission. “Byproduct Material.” 6 July 2023.

<https://ww2.nrc.gov/materials/types/byproduct-mat>

In nature, 99.3 percent of uranium is inert U²³⁸. Only 0.7 percent is U²³⁵, bomb grade when enriched or reprocessed to high levels of purity. Controlling access to even slightly purified U²³⁵ and other highly fissile isotopes is the center of global efforts to prevent nuclear terrorism.

Radioactive sources are classified into four types of basic nuclear materials:

- *Source Material* including thorium, unenriched uranium (a mixture of mostly inert U²³⁸ and trace quantities of highly fissile U²³⁵) as found in nature, and depleted uranium, from which highly radioactive U²³⁵ has been removed.⁴
- *Byproduct material* covers nuclear waste produced from processing source material.⁵
- *Radium* a naturally occurring radioactive material from the decay of uranium.⁶
- *Special nuclear material* involves plutonium (Pu²³⁹), uranium U²³³, and enriched uranium U²³³ or uranium U²³⁵.⁷

All four categories are subject to strict regulations with special nuclear material being the most concerning due to its potential weaponization.

Radioactive sources of nuclear material are largely produced for civilian nuclear power generation. They also can be created for nuclear weapons, as well as medical uses and scientific research.

⁶ United States Nuclear Regulatory Commission.

“Radium.” 6 July 2023.

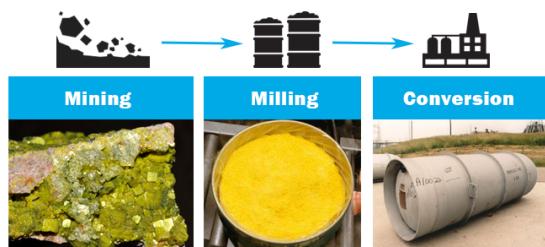
<https://ww2.nrc.gov/materials/types/radium>

⁷ United States Nuclear Regulatory Commission.

“Special Nuclear Material.” 6 July 2023.

<https://ww2.nrc.gov/materials/types/sp-nucmaterials>

Globally, 440 civilian nuclear reactors generate electrical power for 31 different states.⁸ In addition, 50 states use 220 reactors for scientific research and to produce isotopes for medical and industrial usage.⁹ These reactors produce byproduct materials of low enriched uranium (LEU) to high enriched uranium (HEU), or material that could be processed into HEU and weaponized as fissile material.¹⁰



Uranium, from ore, to processing to remove impurities, creating ‘yellow cake’, and finally enrichment for power generation, scientific or medical use, or weapons creation.¹¹

It is feared that terrorists or terrorist organizations could acquire this material to produce various types of weaponry. The U.S. Office of Technology Assessment once stated, “A small group of people, none of whom have ever had access to the classified literature, could design and build a crude nuclear explosive device...only modest machine-shop facilities

⁸ World Nuclear Association. “Nuclear Power in the World Today.” 29 October 2025. <https://world-nuclear.org/information-library/current-and-future-generation/nuclear-power-in-the-world-today>

⁹ Ibid.

¹⁰ Fordow. “LEU vs. HEU: A Simple Guide to Uranium Enrichment Levels.” 15 June 2024. <https://fordow.net/blog/posts/leu-vs-heu-uranium-enrichment-guide>

¹¹ Kamis. “Can Uranium Be Enriched for Nuclear Weapons.” 24 June 2021. <https://paten158j.blogspot.com/2021/06/can-uranium-be-used-for-nuclear-weapons.html>

¹² Graham, Allison. “Nuclear Terrorism Fact Sheet.” Belfer Center for Science and International Affairs. April 2010. <https://www.belfercenter.org/publication/nuclear-terrorism-fact-sheet>

that could be contracted for without arousing suspicion would be required.”¹²

An explosion from a fission or fusion device could destroy an area populated by hundreds of thousands or millions of people through the fireball, blast wave, or immediate and long-term fallout of radioactive particles.¹³ Even without a large-scale explosion, a radiological dispersal device (RDD or “dirty bomb”) could be detonated to not destroy but to quickly spread radiological contamination over an area.¹⁴ These fears have motivated states to exert greater oversight of nuclear materials in recent decades.

As of 2025, twenty-two states possess at least 1kg of High Enriched Uranium (HEU), U²³⁵ purified to at least twenty percent pure U²³⁵, in their civilian/nuclear energy stockpiles.¹⁵ This is an improvement from the previous level of fifty-six states. However, the minimizing of available radioactive sources has not ensured security. 2,000 metric tons of nuclear material that have the potential to be weaponized exists throughout the world. A U.S. facility in Tennessee was breached and robbed of materials¹⁶ while 167 incidents of nuclear material unaccounted for

¹³ Webber, Philip. “Nuclear Weapons: A Beginner’s Guide to the Threats.” Scientists for Global Responsibility, 4 August 2025. <https://www.sgr.org.uk/resources/nuclear-weapons-beginner-s-guide-threats#S5>

¹⁴ Radiation Emergency Medical Management. “Radiological Dispersal Devices (RDDs).” 2 October 2025. <https://remm.hhs.gov/rdd.htm#dirtybomb>

¹⁵ International Panel on Fissile Materials. “Materials: Highly Enriched Uranium.” 28 April 2025. <https://fissilematerials.org/materials/heu.html>

¹⁶ Cervantes, Bobby. “Break-in Stalls Bids at Pantex.” Amarillo Globe-News. 14 August 2012. <https://www.amarillo.com/story/news/local/2012/08/15/break-stalls-bids-pantex/13117487007/>



(MUF)¹⁷ or theft took place in 2019 alone.¹⁸ States have been making mixed progress with minimal UN assistance, but recent events indicate that the illegal trade of radioactive sources is increasing.

In 2021 there were another 146 incidents of nuclear material going missing. Most of these incidents involve small or trace quantities, of little potential use. A typical incident involves enriched uranium lost in the pipes of an enrichment facility. The number of nuclear loss incidents, in other words, testifies to the extremely careful accounting that is normal in the nuclear industry.

But there also are incidents which experts associating the theft with the resurgence of Al-Qaeda.¹⁹ By 2024, the number of incidents rose to 150 with 65 percent occurring when the materials were being transported.²⁰

Once the materials are stolen there is no way to track where they go or who obtains them.

With nuclear uncertainty in the Middle-East²¹ and the possible reemergence of nuclear testing, between China, Russia and the United States,²² inevitably increasing the global supply

¹⁷ "Material Unaccounted For." Reporting Assistant for International Nuclear Safeguards. 2001. <https://rains.doe.gov/page/glossary-material-unaccounted-for>

¹⁸ "Fact Sheet: Nuclear Terrorism: A Clear and Present Danger." Center for Arms Control and Non-Proliferation. 1 August 2016. <https://armscontrolcenter.org/nuclear-terrorism-a-clear-and-present-danger/>

¹⁹ Church, Samuel. "Yes, We Should Still be Worried about Illicit Nuclear Markets. Harvard International Review. 21 August 2024. <https://hir.harvard.edu/illicit-nuclear-markets/>

²⁰ UN News. "Alarming Trends in Nuclear Material Trafficking Highlight Urgent Security Gaps." UN News Global Perspective Human Stories. 28 February 2025. <https://news.un.org/en/story/2025/02/1160656>

²¹ Ferragamo, Masters, and Merrow. "What are Iran's Nuclear and Missile Capabilities?" Council on

of nuclear material, now is the best time for the IAEA to become more involved in the securing of radioactive sources to assist member states in keeping them out of the control of terrorists.

International control of fissile materials

The control of nuclear weapons and the material to construct them has been present since the first nuclear bombs were created. In a meeting with U.S. Senators in 1945, Robert Oppenheimer, the director of the Manhattan Project, expressed concern not only over the possibility of the U.S. being bombed by the Soviet Union but that a nuclear device could be "smuggled into a major American city and detonated without warning."²³

With a Cold War focus on state actors, several treaties were implemented not fissile material, but nuclear weapons themselves:

- *The Treaty on the Non-Proliferation of Nuclear Weapons* (NPT),²⁴

Foreign Relations 16 June 2025.

<https://www.cfr.org/article/what-are-irans-nuclear-and-missile-capabilities>

²² Hunnicutt, Shakil, and Singh. "Trump Tells Pentagon to Resume Testing U.S. Nuclear Weapons." Reuters. 30 October 2025. <https://www.reuters.com/world/china/trump-asks-pentagon-immediately-start-testing-us-nuclear-weapons-2025-10-30/>

²³ Kingsbury, Alex. "History's Troubling Lessons." U.S. News & world Report, 26 February 2007. <https://web.archive.org/web/20130512013912/http://www.usnews.com/usnews/news/articles/070218/26nuclearclear.b.htm>

²⁴ *Treaty on the Non-Proliferation of Nuclear Weapons*. 5 March 1970. <https://treaties.unodc.org/t/npt>

- *Comprehensive Nuclear-Test-Ban Treaty* (CTBT),²⁵ and
- *The Treaty on the Prohibition of Nuclear Weapons* (The Ban Treaty).²⁶
- Also important here is the proposed *Fissile Material Cutoff Treaty* (FMCT).²⁷

Significantly, Article IV of the NPT states:

Article IV, Section 1. Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty.

Article IV, Section 2. All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Parties to the Treaty in a position to do so shall also co-operate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world.

The implications of this treaty are that states may pursue nuclear power for energy or research but are free to do so without major UN oversight. The treaty gives inspection authority to the IAEA to carryout random inspections for the safety of nuclear facilities and the byproducts it produces, but members can assert their sovereignty and delay or prevent inspections.²⁸ As a result, while nuclear weapons have not proliferated, nuclear facilities generating radioactive material have.

The major international effort to reduce the danger or terrorist acquisition of enriched uranium or plutonium is the proposed *Fissile Material Cutoff Treaty* (FMCT).²⁹ This would pledge countries to stop producing new weapons-grade plutonium and uranium.

The proposed FMCT has two major goals. First, it seeks to prevent a nuclear arms race by making it harder for states to build additional nuclear weapons. Second, it tries to reduce future terrorist threats, by limiting the amount of fissile material in existence. It is welcomed by most states, but opposed by those trying or contemplating building-up their nuclear arsenals.

²⁵ *Comprehensive Nuclear-Test-Ban Treaty*. 24 September 1996. <https://treaties.unoda.org/t/ctbt>

²⁶ *Treaty on the Prohibition of Nuclear Weapons*. 20 September 2017. <https://treaties.unoda.org/t/tpnw>

²⁷ Daryl Kimball, 'Fissile Material Cut-off Treaty (FMCT) at a Glance', Arms Control Association, November 2024, <https://www.armscontrol.org/factsheets/fissile-material-cut-treaty-fmct-glance>

²⁸ IAEA. "Mode Protocol Additional the Agreement(s) Between State(s) and the International

Atomic Energy Agency for the Application of Safeguards." September 1997. <https://www.iaea.org/sites/default/files/infocirc540c.pdf>

²⁹ Daryl Kimball, 'Fissile Material Cut-off Treaty (FMCT) at a Glance', Arms Control Association, November 2024, <https://www.armscontrol.org/factsheets/fissile-material-cut-treaty-fmct-glance>



IAEA inspectors examining fresh nuclear fuel

UN Control Efforts

As nuclear power spread, concerns over the management of its spent fuel grew. In 1987, the *Convention on the Physical Protection of Nuclear Material* (CPPNM) entered into force through the IAEA. This treaty was limited to cover peaceful/civilian applications of nuclear power and not those related to the military. Important features of the treaty include:

Article 3: Each State Party shall take appropriate steps within the framework of its national law and consistent with international law to ensure as far as practicable that, during international nuclear transport, nuclear material within its territory, or on board a ship or aircraft under its jurisdiction insofar as such ship or aircraft is engaged in the transport to or from that State, is protected at the levels described in Annex I.

Article 4:
1. Each State Party shall not export or authorize the export of nuclear material

unless the State Party has received assurances that such material will be protected during the international nuclear transport at the levels described in Annex I.

2. Each State Party shall not import or authorize the import of nuclear material from a State not party to this Convention unless the State Party has received assurances that such material will during the international nuclear transport be protected at the levels described in Annex I.

Annex I of the treaty goes into various details on how different categories of nuclear materials are to be kept under strict guard and safe storage with appropriate monitoring devices.³⁰

This was a good first-step by the UN, but it did not involve the General Assembly. After this treaty entered into force, it was neglected by the GA and IAEA until a 2005 amendment went into force in 2016. The treaty was renamed the *Convention on the Physical Protection of Nuclear Material and Nuclear Facilities* with new goals added to protect nuclear power plants:

Article 1A: The purposes of this Convention are to achieve and maintain worldwide effective physical protection of nuclear material used for peaceful purposes and of nuclear facilities used for peaceful purposes; to prevent and combat offences relating to such material and facilities worldwide; as well as to facilitate co-operation among States Parties to those ends.

Article 2A: Section 1. Each State Party shall establish, implement and maintain an appropriate physical protection regime applicable to nuclear material and nuclear facilities under its jurisdiction, with the aim of:

³⁰ INFCIRC/274/Rev.1. *Convention on the Physical Protection of Nuclear Material*. November 1979. <https://www.iaea.org/sites/default/files/infcirc274.pdf>

- (a) protecting against theft and other unlawful taking of nuclear material in use, storage and transport;
- (b) ensuring the implementation of rapid and comprehensive measures to locate and, where appropriate, recover missing or stolen nuclear material; when the material is located outside its territory, that State Party shall act in accordance with article 5;
- (c) protecting nuclear material and nuclear facilities against sabotage; and
- (d) mitigating or minimizing the radiological consequences of sabotage.³¹

This amendment was added to reflect the post-Cold War changes to the UN state system and to address the rise of non-state terrorist groups.

Inspired by the IAEA, the UN General Assembly's First Committee began its own work to confront the issue of controlling radioactive sources. In 2007, the General Assembly adopted a resolution titled *Preventing the Acquisition by Terrorists of Radioactive Materials and Sources*. This resolution builds upon the work of the IAEA and also calls upon the GA to conduct its own research on this issue.

Every two years the UN reaffirms its commitment to this issue by passing an updated version of the original resolution that reflects the progress that has been made. The most recent version states:

³¹ INFCIRC/274/Rev.1/Mod.1 (Corrected.)
Amendment to the Convention on the Physical Protection of Nuclear Material. 18 October 2021.
<https://www.iaea.org/sites/default/files/publications/documents/infcircs/1979/infcirc274r1m1c.pdf>

³² A/C.1/79/L.64. *Preventing the Acquisition by Terrorists of Radioactive Sources*. 17 October 2024.
<https://reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com24/resolutions/L64.pdf>

Deeply concerned by the threat of terrorism and the risk that terrorists may acquire, traffic in or use radioactive sources in radiological dispersion devices,

Deeply concerned also by the potential threat to human health and the environment that would result from the use of such devices by terrorists,

Noting with concern the occurrence of nuclear and radioactive materials that are outside of regulatory control or being trafficked,

Noting with deep concern the consequences of armed conflicts as well as attacks in all forms by terrorists on the safety and security of radioactive sources that could lead to a loss or a theft of these sources and increase the risk of trafficking of such sources,

Calls upon Member States to support international efforts to prevent the acquisition and use by terrorists of radioactive sources and, if necessary, suppress such acts, in accordance with their national legal authorities and legislation and consistent with international law;³²

This topic has been gaining support with France and Germany calling members to join them in updating the resolution with more technical terms from the IAEA so that future resolutions can specify how to manage nuclear materials.³³

³³ Petit, Camille. "Declaration Before the Vote." 4 November 2024.
https://reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com24/statements/4Nov_France-Germany.pdf



The most ambitious action taken by the General Assembly was to propose a new treaty in 2023 called *Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices*.³⁴ This treaty is still in development but does call for member states to cease all production of radioactive sources of nuclear material, be more transparent about all stockpiles, and to open more dialogue on how a new ban treaty may finally be implemented.

Preventing the acquisition by terrorists of radioactive sources is achieved by controlling nuclear material. By default, the IAEA has led the charge in these efforts. The UN General Assembly only recently introduced its own measures to assist overall UN endeavors. There are plenty of options for how it can assist UN goals in protecting peoples from the threat of nuclear armed terrorists.

Member State Positions

China possesses a large nuclear weapons arsenal with an estimated civilian 1000kg stockpile of HEU.³⁵ China is concerned with terrorists acquiring nuclear materials and has recently simulated a dirty bomb attack to measure the damage and potential government response.³⁶ China is a party to the CPPNM and operates nuclear power reactors.

³⁴ A/C.1/78/L.12. *Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices*. 12 October 2023. <https://docs.un.org/en/A/C.1/78/L.12>

³⁵ “Civilian HEU: Who Has What?” Nuclear Threat Initiative, October 2019. https://nonproliferation.org/wp-content/uploads/2021/10/heu_who_has_what.pdf

³⁶ Chen, Stephen. “PLA Team Simulates ‘Dirty Bomb’ Fallout in Rare Field Test as Nuclear Tension Heats Up.” South China Morning Post. 9 November 2025. <https://www.scmp.com/news/china/science/article/33>

China supports measures for nuclear security so long as each Member State remains in full control of everything that happens on their territory. Russia opposes further inspections or international oversight power.

China supports a Fissile Material Cutoff Treaty (FMCT), but conditionally on US acceptance of a treaty banning weapons in outer space, which the US refuses to do. Washington wants to keep open the option of placing missile-defense interceptors in space.

The Democratic People’s Republic of Korea (DPRK/North Korea) continues to develop and test its nuclear weapons program. Operating outside of the NPT and IAEA oversight it is difficult to ascertain how much nuclear material the DPRK possesses, but it is estimated to be 300-1700kg from its enrichment reactors.³⁷ Concerns are rampant that the DPRK is active in the global import and export of nuclear material to an unknown number of state and non-state actors.

France maintains a nuclear weapons stockpile with military and civilian controlled plutonium, and 5369kg of HUE through its nuclear power plants.³⁸ The French Nuclear Safety and Radiation Protection Authority has joined with other French organizations to assist in the securing of nuclear material.³⁹

[31857/pla-team-simulates-dirty-bomb-fallout-rare-field-test-nuclear-tension-heats](https://pla-team-simulates-dirty-bomb-fallout-rare-field-test-nuclear-tension-heats)

³⁷ International Panel on Fissile Materials. “North Korea.” 22 May 2025. https://fissilematerials.org/countries/north_korea.html

³⁸ International Panel on Fissile Materials. “France.” 22 May 2025. <https://fissilematerials.org/countries/france.html>

³⁹ ASNR. “On 1st January 2025, the ASN and IRSN Became the French Authority for Nuclear Safety and Radiation protection-ASNR. <https://regulation-oversight.asnr.fr/>



France strongly supports a global Fissile Material Cutoff Treaty (FMCT), banning creation of new fissile material. It also supports measures to strengthen protection of fissile material stockpiles by industry, medical facilities, scientific centers and the military.

India is believed to be in possession of HEU and plutonium. India is expanding their nuclear reactor infrastructure but is limiting the handling and control of its nuclear material for military purposes.⁴⁰ In international negotiations, India demands that all countries be treated equally. This means exactly the same rules for nuclear and non-nuclear states, for established nuclear powers and emerging nuclear states like India. Above all, India refuses to accept controls or limits that other nuclear states refuse on themselves. This explains its opposition to the 1968 NPT, which allows existing nuclear power to keep their weapons, while denying them to newcomers only.

Israel is highly secretive about its nuclear programs. It is party to the CPPNM and is estimated 300kg of HEU and plutonium.⁴¹ Israel is greatly concerned over the proliferation of nuclear materials, particularly to Iran. It is feared that Iran may enrich uranium for its own weapons or distribute it to terrorist organizations. It is not a leading actor in negotiations like talks for the FMCT, preferring to keep a low profile.

The **Non-Aligned Movement** has seen states share significant decrease in the HEU. Over thirty states in recent decades have turned over their stockpiles to UN control where they were

given to established nuclear states for safer guarding. Non-Aligned states are the most vocal proponents of not only stricter controls on nuclear material but of the total elimination of all nuclear weapons.

NAM Member States generally support measures calling for greater nuclear security in their territory, especially helping prevent and intercepting illegal trans-shipping through their territory. But they expect in return to be offered easier access to civilian nuclear technology, especially civilian power generating reactors and infrastructure, including easier financing for reactor and electrical distribution grid development.

Pakistan's stockpile of HEU is unknown. It operates various enrichment reactors and is estimated to hold 5 tons within its borders.⁴² Like India, Pakistan's nuclear programs are centered on the military and is also a party to the CPPNM. Pakistan opposes all proposals that would affect countries unequally, including the proposed Fissile Material Cutoff Treaty (FMCT). Any prohibition on creating new fissile material, say Pakistani diplomats, would disadvantage Pakistan compared to veteran nuclear powers who already have created large stockpiles.

Russia has the largest stockpile of nuclear weapons in the world with 5,460 warheads. It operates numerous nuclear reactors with a large stockpile of HEU that it uses for military purposes.⁴³ Russia has been working with former Soviet Republics to move all their nuclear materials to Russia for safer and more experienced management.

⁴⁰ International Panel on Fissile Materials. "India." 22 May 2025.

<https://fissilematerials.org/countries/india.html>

⁴¹ International Panel on Fissile Materials. "Israel." 22 May 2025.

<https://fissilematerials.org/countries/israel.html>

⁴² International Panel on Fissile Materials. "Pakistan." 22 May 2025.
<https://fissilematerials.org/countries/pakistan.html>

⁴³ International Panel on Fissile Materials. "Russia." 22 May 2025.
<https://fissilematerials.org/countries/russia.html>



Russia strongly supports measures for nuclear security so long as each Member State remains in full control of everything that happens on their territory. Russia opposes further inspections or international oversight power.

Like China, Russia supports a Fissile Material Cutoff Treaty (FMCT), but conditionally on US acceptance of a treaty banning weapons in outer space, which the US refuses to do. Washington wants to keep open the option of placing missile-defense interceptors in space.

The **United Kingdom** is in the process of reducing its arsenal of nuclear weapons. It has 691kg of civilian HEU as well as several tones of military grade plutonium.⁴⁴ The United Kingdom is expanding its operation of nuclear power plants while taking more initiatives to guard nuclear materials.⁴⁵

The UK strongly supports a global Fissile Material Cutoff Treaty (FMCT), banning creation of new fissile material. It also supports measures to strengthen protection of fissile material stockpiles by industry, medical facilities, scientific centers and the military.

The **United States** holds the second largest amount of nuclear weapons with 5,177 warheads. The United States owns 87.6 tons of plutonium and 481 tons of HEU. The government has pledged not to apply this material towards military projects, but the results of this pledge are unknown as only a small amount of plutonium is under IAEA oversight at the Savannah River Site near Augusta, Georgia.⁴⁶

⁴⁴ International Panel on Fissile Materials. “United Kingdom.” 22 May 2025.
https://fissilematerials.org/countries/united_kingdom.html

⁴⁵ “Experts Sought to Shape Britain’s Nuclear Fission Materials Future.” United Kingdom National Nuclear Laboratory. 21 July 2025.

Under President Trump, the United States stresses unique national advantage. It continues to support the 1968 Nuclear Non-Proliferation Treaty, because it helps the United States. But it opposes the Comprehensive Nuclear Test Ban Treaty. The Trump administration has no clear position of the proposed Fissile Material Cutoff Treaty (FMCT), but refuses to participate in negotiations.

Some Possible Proposals for Action

The IAEA has the opportunity to innovate new approaches. Global tensions are rising with more terrorist organization looking to expand their weaponry and nuclear member states returning to Cold War nuclear protocols. As sovereign nations, the Member States of the IAEA are free to develop the proposals they see fit. Some possible proposals for how the IAEA can address these problems include the following:

Continue to renew national efforts and policies to prevent nuclear materials from reaching terrorists. For decades the GA was silent on this issue as it was assumed that other treaties or the IAEA would take responsibility. Change happens slowly in the GA, so the issue needs to be regularly reiterated and updated.

Develop the proposed *Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices*

<https://uknml.com/2025/07/experts-sought-to-shape-britains-nuclear-fission-materials-future/>

⁴⁶ International Panel on Fissile Materials. “United States.” 22 May 2025.
https://fissilematerials.org/countries/united_states.html



(the Fissile Material Cut-Off Treaty, FMCT)

Popular known as the proposed *fizz-ban treaty*, this would be the first major step to actually reduce the amount of highly enriched uranium and plutonium manufacturer. The proposed treaty calls for an end to production of new highly enriched fissile material. As a new treaty proposal, not much work has been accomplished on shaping its parameters. This means the potential treaty is completely open for any suggestions that the IAEA may deem appropriate.

The treaty is strongly supported by countries without nuclear arsenals, and by some Nuclear Weapons States, especially France and the United Kingdom, countries uninterested in expanding their nuclear arsenals.

The FMCT is opposed by China, as an effort to force nuclear advantages, benefitting countries that already have stockpiles. A treaty would end China's effort to double or triple its nuclear arsenal. Other emerging nuclear weapons states are opposed, led by India and Pakistan. Russia and is open to the proposal, but expects greater support for its international exports of civilian nuclear power generating reactors and equipment. The United States is opposed,

viewing the FMCT as an attack on America's ability to rapidly increase its nuclear forces.

Address problems among specific nuclear weapons states. Instead of developing universal, global initiatives aimed at terrorist risks everywhere, the IAEA could agree to focus attention on specific countries thought to pose special dangers of illicit nuclear sharing or diversion.

For example, China, Russia, and the United States have hinted that they may resume nuclear testing or increase their weapons stockpiles. The Member States without nuclear weapons, including the majority-controlled Non-Aligned Movement, can use its numbers to pressure these states to uphold UN commitments and similar treaty mandates.

Increase UN oversight of terrorist organizations or regions prone to terrorism.

These organizations rely on member states to sell or traffic nuclear materials in black markets around the world. If the UN can identify and close down the flow of nuclear materials, terrorists will unlikely be able to acquire the materials they need to create weapons.

Bibliography

A/C.1/78/L.12. *Treaty Banning the Production of Fissile Material for Nuclear Weapons or Other Nuclear Explosive Devices*. 12 October 2023. <https://docs.un.org/en/A/C.1/78/L.12>

A/C.1/79/L.64. *Preventing the Acquisition by Terrorists of Radioactive Sources*. 17 October 2024. <https://reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com24/resolutions/L64.pdf>

A/RES/62/46. *Preventing the Acquisition by Terrorists of Radioactive Materials and Sources*. 5 December 2007. <https://docs.un.org/en/A/RES/62/46>



Preventing Acquisition of Radioactive Sources



ASNR. “On 1st January 2025, the ASN and IRSN Became the French Authority for Nuclear Safety and Radiation protection-ASNR. <https://regulation-oversight.asnr.fr/>

Cervantes, Bobby. “Break-in Stalls Bids at Pantex. Amarillo Globe-News. 14 August 2012.

<https://www.amarillo.com/story/news/local/2012/08/15/break-stalls-bids-pantex/13117487007/>

Chen, Stephen. “PLA Team Simulates ‘Dirty Bomb’ Fallout in Rare Field Test as Nuclear Tension Heats Up.” South China Morning Post. 9 November 2025.

<https://www.scmp.com/news/china/science/article/3331857/pla-team-simulates-dirty-bomb-fallout-rare-field-test-nuclear-tension-heats>

Church, Samuel. “Yes, We Should Still be Worried about Illicit Nuclear Markets. Harvard International Review. 21 August 2024. <https://hir.harvard.edu/illicit-nuclear-markets/>

“Civilian HEU: Who Has What?” Nuclear Threat Initiative. October 2019.

https://nonproliferation.org/wp-content/uploads/2021/10/heu_who_has_what.pdf

Comprehensive Nuclear-Test-Ban Treaty. 24 September 1996. <https://treaties.unoda.org/t/ctbt>

“Experts Sought to Shape Britain’s Nuclear Fission Materials Future.” United Kingdom National Nuclear Laboratory. 21 July 2025. <https://uknnl.com/2025/07/experts-sought-to-shape-britains-nuclear-fission-materials-future/>

“Fact Sheet: Nuclear Terrorism: A Clear and Present Danger.” Center for Arms Control and Non-Proliferation. 1 August 2016. <https://armscontrolcenter.org/nuclear-terrorism-a-clear-and-present-danger/>

Ferragamo, Masters, and Merrow. “What are Iran’s Nuclear and Missile Capabilities?” Council on Foreign Relations 16 June 2025. <https://www.cfr.org/article/what-are-irans-nuclear-and-missile-capabilities>

Fordow. “LEU vs. HEU: A Simple Guide to Uranium Enrichment Levels.” 15 June 2024.
<https://fordow.net/blog/posts/leu-vs-heu-uranium-enrichment-guide>

Graham, Allison. “Nuclear Terrorism Fact Sheet.” Belfer Center for Science and International Affairs. April 2010. <https://www.belfercenter.org/publication/nuclear-terrorism-fact-sheet>

Hunnicutt, Shakil, and Singh. “Trump Tells Pentagon to Resume Testing U.S. Nuclear Weapons.” Reuters. 30 October 2025. <https://www.reuters.com/world/china/trump-asks-pentagon-immediately-start-testing-us-nuclear-weapons-2025-10-30/>

IAEA. “Disused Sources.” <https://www.iaea.org/topics/disused-sources>

IAEA. “Kazakhstan removes Stockpile of Fresh High Enriched Uranium Research Reactor Fuel.” 2 October 2014. <https://www.iaea.org/newscenter/news/kazakhstan-removes-stockpile-fresh-high-enriched-uranium-research-reactor-fuel>



Preventing Acquisition of Radioactive Sources



IAEA. “Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards.” September 1997.

<https://www.iaea.org/sites/default/files/infirc540c.pdf>

INFCIRC/274/Rev.1. *Convention on the Physical Protection of Nuclear Material*. November 1979.

<https://www.iaea.org/sites/default/files/infirc274.pdf>

INFCIRC/274/Rev.1/Mod.1 (Corrected.) *Amendment to the Convention on the Physical Protection of Nuclear Material*. 18 October 2021.

<https://www.iaea.org/sites/default/files/publications/documents/infircs/1979/infirc274r1m1c.pdf>

International Panel on Fissile Materials. “France.” 22 May 2025.

<https://fissilematerials.org/countries/france.html>

International Panel on Fissile Materials. “India.” 22 May 2025.

<https://fissilematerials.org/countries/india.html>

International Panel on Fissile Materials. “Israel.” 22 May 2025.

<https://fissilematerials.org/countries/israel.html>

International Panel on Fissile Materials. “North Korea.” 22 May 2025.

https://fissilematerials.org/countries/north_korea.html

International Panel on Fissile Materials. “Materials: Highly Enriched Uranium.” 28 April 2025.

<https://fissilematerials.org/materials/heu.html>

International Panel on Fissile Materials. “Pakistan.” 22 May 2025.

<https://fissilematerials.org/countries/pakistan.html>

International Panel on Fissile Materials. “Russia.” 22 May 2025.

<https://fissilematerials.org/countries/russia.html>

International Panel on Fissile Materials. “United Kingdom.” 22 May 2025.

https://fissilematerials.org/countries/united_kingdom.html

International Panel on Fissile Materials. “United States.” 22 May 2025.

https://fissilematerials.org/countries/united_states.html

Kamis. “Can Uranium Be Enriched for Nuclear Weapons.” 24 June 2021.

<https://paten158j.blogspot.com/2021/06/can-uranium-be-used-for-nuclear-weapons.html>

Kingsbury, Alex. “History’s Troubling Lessons.” U.S. News & World Report, 26 February 2007.

<https://web.archive.org/web/20130512013912/http://www.usnews.com/usnews/news/articles/070218/26nuclear.b.htm>

“Material Unaccounted For.” Reporting Assistant for International Nuclear Safeguards. 2001.

<https://rains.doe.gov/page/glossary-material-unaccounted-for>



Preventing Acquisition of Radioactive Sources



Mulvey, Stephen. "Could Terrorists Get Hold of a Nuclear Bomb?" BBC News, 12 April 2010. <http://news.bbc.co.uk/2/hi/americas/8615484.stm>

Petit, Camille. "Declaration Before the Vote." 4 November 2024. https://reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com24/statements/4Nov_France-Germany.pdf

Radiation Emergency Medical Management. "Radiological Dispersal Devices (RDDs)." 2 October 2025. <https://remm.hhs.gov/rdd.htm#dirtybomb>

"Safeguards Inspectors in Action: Behind the Scenes at Dukovany Nuclear Power Plant." IAEA. 15 March 2013. <https://www.iaea.org/newscenter/multimedia/photoessays/safeguards-inspectors-action-behind-scenes-dukovany-nuclear-power-plant>

Treaty on the Non-Proliferation of Nuclear Weapons. 5 March 1970. <https://treaties.unoda.org/t/npt>

Treaty on the Prohibition of Nuclear Weapons. 20 September 2017. <https://treaties.unoda.org/t/tpnw>

U.S. Department of Energy. "U.S. and Japan Remove All Highly Enriched Uranium from Additional Research Reactor—Two Years Ahead of Schedule." 10 April 2024. <https://www.energy.gov/nnsa/articles/us-and-japan-remove-all-highly-enriched-uranium-additional-research-reactor-two-years>

United States Nuclear Regulatory Commission. "Byproduct Material." 6 July 2023. <https://ww2.nrc.gov/materials/types/byproduct-mat>

United States Nuclear Regulatory Commission. "Radium." 6 July 2023. <https://ww2.nrc.gov/materials/types/radium>

United States Nuclear Regulatory Commission. "Source Material." 6 July 2023. <https://ww2.nrc.gov/materials/types/srcmaterial>

United States Nuclear Regulatory Commission. "Special Nuclear Material." 6 July 2023. <https://ww2.nrc.gov/materials/types/sp-nucmaterials>

UN News. "Alarming Trends in Nuclear Material Trafficking Highlight Urgent Security Gaps."

UN News Global Perspective Human Stories. 28 February 2025. <https://news.un.org/en/story/2025/02/1160656>

Webber, Philip. "Nuclear Weapons: A Beginner's Guide to the Threats." Scientists for Global Responsibility, 4 August 2025. <https://www.sgr.org.uk/resources/nuclear-weapons-beginner-s-guide-threats#S5>

World Nuclear Association. "Nuclear Power in the World Today." 29 October 2025. <https://world-nuclear.org/information-library/current-and-future-generation/nuclear-power-in-the-world-today>



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