

# Elements of a Fissile Material Cut-off Treaty

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February 15, 2018  
UNHQ New York

# Recent FM(C)T developments

- Group of Governmental Experts
- High Level Expert Preparatory Group
- Draft treaty submitted by France
- Draft treaty prepared by the International Panel on Fissile Materials

# The FM(C)T triangle

- Definitions
  - What is fissile material?
- Verification
  - Focused or comprehensive approach?
- Scope
  - How the treaty should treat existing stocks?

# What is fissile material?

Fissile material	Article XX of the IAEA Statute	All enriched uranium (including LEU) All plutonium (separated or in spent fuel)
	Unirradiated direct use material	Highly enriched uranium (>20% U-235 or U-233) All separated plutonium
	Weapon-grade material	Weapon-grade HEU (>90% U-235) Separated weapon-grade plutonium
	Intermediate-grade material	Excludes naval HEU (up to ~60% U-235) Excludes reactor-grade plutonium
	Other definitions	May include Np, Am

# How to ban the production of fissile material for weapons?

- Fissile material that is produced (or acquired from any source) should be declared and submitted to verification
- Verification system is designed to ensure that
  - Submitted material is not used for nuclear weapons
  - Once submitted, material cannot be withdrawn
  - No material is produced clandestinely

# Components of the verification system

- Verification at production facilities
  - All produced material is declared and submitted to verification
- Downstream verification
  - Fissile material is not withdrawn or diverted
  - Fissile material is not used for weapon purposes
- Detection of undeclared production
  - No covert production facilities

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# Production and production facilities

- Production is any activity or process that produces fissile materials
- Production facility is any facility that is capable of producing fissile materials



# Verification at production facilities

- Procedures would have to be facility-specific
- Declare facilities that are capable of producing fissile materials
- Implementing organization decides on specific verification measures
  - Some facilities may be exempt (laboratory-scale, converted, shut down, dismantled etc.)

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# Downstream verification

- Once submitted, material cannot be withdrawn
- Material cannot be used for weapon purposes
- Non-proscribed military uses may require a special arrangement
  - Military naval reactors, military research reactors
  - Material should not be withdrawn from verification
- Transfers to other states

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# Detection of undeclared production

- Undeclared production at declared production facilities
  - Should be prevented by facility-specific verification measures
  - May require “upstream” verification arrangements
- Undeclared facilities
  - May require non-routine inspections and other measures

# Existing stocks

- FM(C)T would create a system for handling newly produced materials
- Same system will be able to handle existing materials
- Any existing material can be submitted to verification
  - Material voluntarily declared excess
  - "Disarmament material"

# Benefits of the FM(C)T

- No production of fissile materials for weapons
- Monitoring of all facilities capable of producing fissile materials
- Verification system that can eliminate existing stocks
- Verified declarations of existing stocks

## Fissile Material (Cut-off) Treaty: Elements of the Emerging Consensus

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The discussion of the Fissile Material (Cut-off) Treaty has reached a point of a broad agreement on a number of the elements of the future treaty. Although States still hold different views on some of the key issues, such as the definition of fissile material or the scope of the treaty, there appears to be a convergence of views on the meaning of the treaty obligations, of the general structure of the treaty, and of the basic characteristics of the verification system that the treaty will create. This paper presents the elements of this emerging consensus. The focus on the points of agreement helps emphasize the remaining differences and make clear the nature of the compromises that would be required to successfully negotiate a viable treaty.



Download the report at <https://goo.gl/1BdfYP>

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## Deferred Verification Verifiable Declarations of Fissile Material Stocks

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The report describes a verification arrangement that would allow the future Fissile Material Cut-off Treaty to include declarations of existing fissile material stocks covering all categories of materials, including materials in nuclear weapons. This arrangement, referred to as "deferred verification", would allow declarations to be legally binding and verifiable. Combined with a ban on the production of new materials that would be established by the FMCT, this arrangement could support verification of initial declarations of fissile material stocks and the gradual elimination of all weapon-related fissile materials.



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