

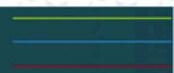


# Nuclear Energy: Between Legitimacy and Threat

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# Nuclear Energy is ... Victim of the Original Sin

First developments of nuclear applications were dedicated to the elaboration of an **explosive device**

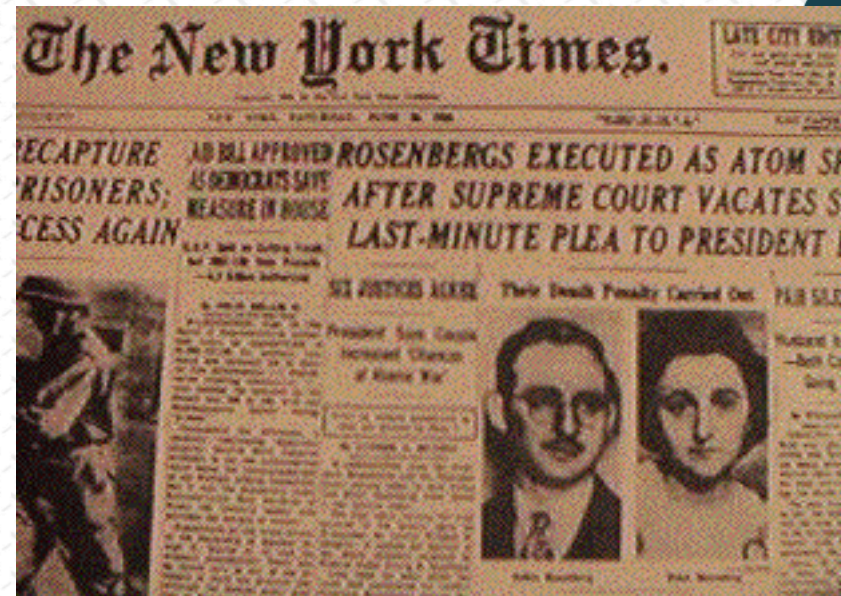
WWII : Hiroshima and Nagasaki

Consequence: nuclear energy was first considered as **military** technology rather than an energy with potential **peaceful** applications



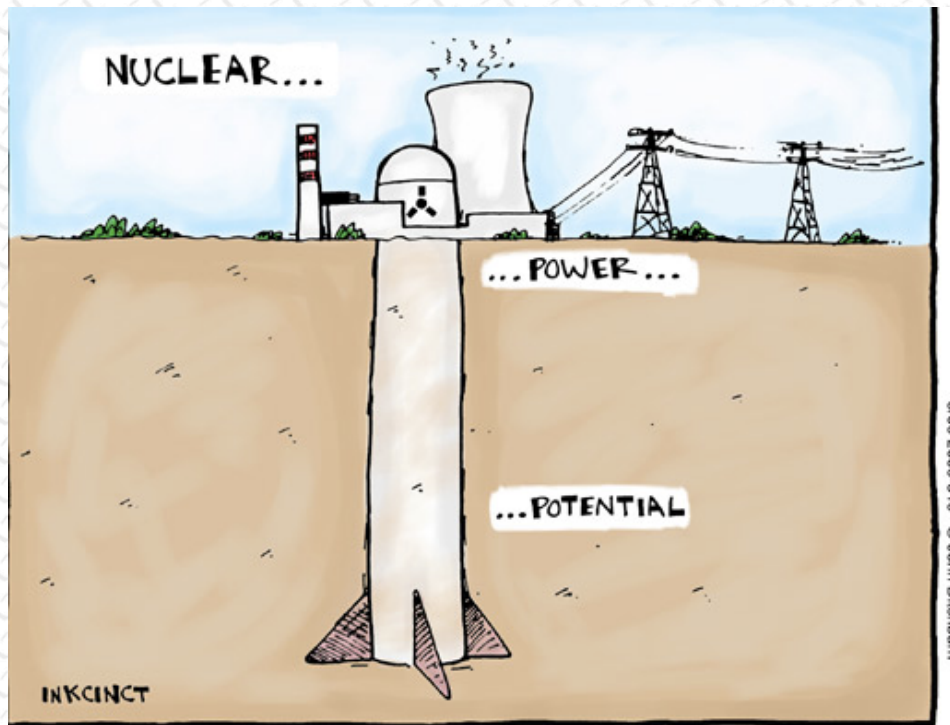
# 1946 : US imposes a trade prohibition on all nuclear technologies

**Adoption** in July 1946 of the Atomic Energy Act (McMahon Act) establishing a program to **restrict the dissemination of information** inside and outside the country



# Motivation

If potential peaceful applications of nuclear physics could be developed, it **could not be split** from military one





# Nevertheless

- Development of nuclear weapons by **Soviet Union without US technology**
- Development of nuclear peaceful application raise important **economic expectations**
  - Soviet Union was developed peaceful application and was ready to share it
- **Conditions of supply** required to end users interesting in developing civil nuclear programs by certain European States were less constraining than the one imposed by US industries.

Production of isotopes for medical use

# 1953: US reverses its policy

**Principle** : Development of peaceful application of nuclear energy and international exchange of nuclear technologies are possible **IF** and **ONLY** fissile materials produced or transferred are under adequate safeguards



**Atoms for Peace Plan** presented by the President Dwight D. Eisenhower in December 1953:

Open **access** to (US) **peaceful** nuclear applications conditioned upon the submission by the end-user of adequate **safeguards**, that shall be assumed by the supplier State or by an international organisation

Creation of International Atomic Energy Agency (IAEA) and its safeguards system

# Opening nuclear trade for selected countries

Establishment of a **multilateral export control regime** was suggested to **NATO** members :  
**COCOM**

**Main objective** : avoiding the transfer of the US technologies directly or indirectly to a **Warsaw Pact Members** or another sensitive countries, such as **China**

- Informal prohibition exports of **sensitive** items, mostly military related ones, to non-allied countries
- **Derogation** would have to be authorised by **consensus** of all participating States



# The impossible challenge to balance economic interest, political interests and non proliferation concerns

1968 **TNP** : formal acknowledgment for certain States to legally detain **nuclear weapons** against inalienable right for all participating state to have access and develop **nuclear peaceful activities**

**Two commitments** to be implemented by the NPT Supplier States :

1. To control the transfers to **NNWS** of an **undefined list** of items
2. To submit the export of nuclear items to the condition that on all source or special fissionable material in all peaceful nuclear activities within the territory of end user State would be subject to **undefined safeguards**



# But allowing nuclear trade involves competition between potential suppliers ...

To clarify NPT commitments and to avoid unfair competition a group of suppliers states (NSG) has adopted **common guidelines**:

- Defining a **list** of materials, equipments and technologies
- Determined that the **IAEA safeguards** required by Article III of the NPT are those defined by the INFCIRC/153 also called Comprehensive Safeguards
- Common criteria and conditions to authorise the export

## Nuclear suppliers group guidelines

- **Soft law** instrument
  - Politically binding instrument
- **Non universal**
  - Only nuclear and nuclear potential suppliers could be member of the group
- Require **adoption of national implementing** provisions
  - Risk of inconsistency



# What are the challenges for XXIst century ?

# 1. Nuclear weapons proliferation didn't stop

- **New nuclear weapon States** since entry into force of NPT :
  - North Korea, Pakistan, India, Israel
- **New States of concerns**
  - Iran
- **Lack of coherence** in the nuclear trade policy among suppliers
  - Indian exception



# The Indian exception

- **India** : non-NPT nuclear weapon State  
Not member of export control regimes
- **NPT State essential commitment** :  
Prohibition to export nuclear items to  
a nuclear weapon State not Party to  
the Treaty
- **No exception** authorized by the Treaty

Therefore exporting nuclear items to India  
is in **contradiction** with international legally  
binding commitment

# When softlaw lifts a legally binding prohibition

2008 an exception has been adopted by the NSG authorising States members to export all **nuclear and nuclear-related items** to India

Restricted to peaceful applications and not only for safety



- ## **NSG lack of coherence of export control policy** has been raised by
- **Pakistan** requesting a similar status
  - **Iran** considering that suppliers reward a real proliferator and impeach an NPT State to use its right to access to peaceful applications  
US, Russia, UK, Germany, China, France and other main suppliers have ratified the NPT and are NSG States Parties

## 2. From export control to trade control

- **Multilateral export control regimes** have been focusing essentially on **export** transactions
- **Proliferation scheme** has become complex and involves an network of actors and operations  
Brokering, transit, financing, shipping, importing
- **New proliferation concerns** raised by Non-State Actors : nuclear and radiological  
Terrorism and dirty bomb

Require fundamental review of existing nuclear trade control regimes



### 3. From nuclear trade control to WMD trade control

#### Slow merging of nuclear trade control principles with other WMD non-proliferation principles

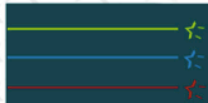
- Development of the **dual-use items** concept(s)  
Peaceful and non-peaceful, nuclear and non-nuclear, civilian and military, conventional and WMD  
Telecommunication interception, internet monitoring equipment, mass-surveillance, monitoring and violation of human rights
- **Reversing/sharing** the non-proliferation responsibility from public authorities to economic operators  
Catch-all clause provisions

## 4. From tangible transfers to intangible transfers

- Efficiency of trade control system relays on **customs verifications**
  - Possibility to control the conformity of custom declaration with the content of the container
- Proliferators attempt to acquire items but also technologies



- Technology transfers could be done voluntary or involuntary via **intangible** means of transfers  
Transfers via emails, uploading or downloading from webserver,, intranet exchanges, cloud computing...
- Almost impossible for **Customs** to control  
Needs of specific risk assessment tools
- **New technology** development increases the trend  
3D printer and possibility of manufacturing process monitor from a third location



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