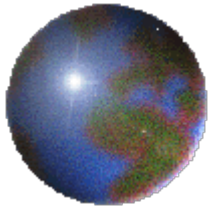


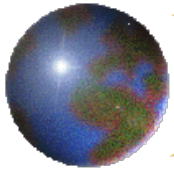
Building public confidence in nuclear energy (I)



Assessment of existing framework

**Caroline Jorant, consultant
SDRI Consulting /Partnership for Global Security**

GNI, WASHINGTON DC , JUNE 28th , 2016



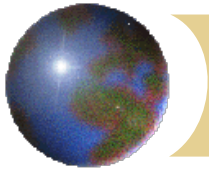
Introduction

Existing framework; main features

Existing framework; assessing strengths and weaknesses

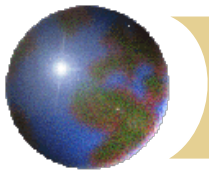
Factors of evolution

Conclusion



Introduction

- ✚ Nuclear peaceful uses developed in a global perspective (Atom for Peace)
- ✚ Complex and rather comprehensive global framework, legal/political commitments and international tools, IAEA central role
- ✚ Is it enough to build public confidence?
- ✚ Public perception differs from risk assessment, needs confidence in institutions and people, “needs to know”



Introduction the Risks

Specific nuclear and global risks or public concerns

SAFETY

Technical failure

Natural event

Human error

SECURITY

Terrorist attacks on facilities

Insider threat

Theft

Dirty bomb

PROLIFERATION

Through use of imported material, equipment and technology

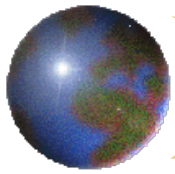
Through theft

Through indigenous development and procurement

NUCLEAR ENVIRONMENTAL “LEGACY” or FOOTPRINT

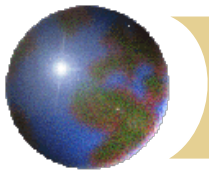
Decommissioning & Dismantling

The Waste issue



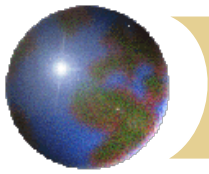
Existing framework main features

- ⊕ Nuclear safety regime
- ⊕ Emergency preparedness
- ⊕ Nuclear security regime
- ⊕ Non Proliferation regime



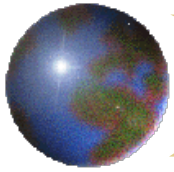
Nuclear safety regime

- ✚ Convention on Nuclear Safety (CNS)
- ✚ IAEA implementation
- ✚ Joint Convention on safety of spent fuel management and safety of radioactive waste management (Joint Convention)



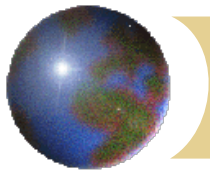
Nuclear safety regime

✚ World Association of Nuclear Operators (WANO)



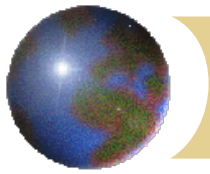
Emergency preparedness and response

- ✚ Convention on Early Notification of a Nuclear Accident
- ✚ Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
- ✚ Implementation



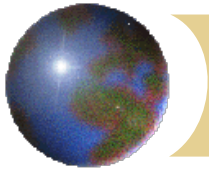
Nuclear security regime

- ❖ Convention on the Physical Protection of Nuclear Material (CPPNM)
- ❖ 2005 Amendment
- ❖ INFCIRC 225/rev5 Nuclear Security recommendations on PPNM and nuclear facilities
- ❖ IAEA implementation



Nuclear security regime

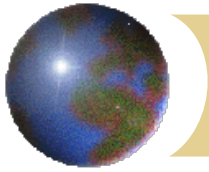
- ✚ UN Resolution 1540
- ✚ ICSANT / International Convention on the Suppression of Acts of Nuclear Terrorism April 2005
- ✚ NSS process (2010/2016)



Nuclear security regime

✚ WINS/ World Institute for Nuclear Security

✚ ENSRA/ European Nuclear Security
Regulators Association

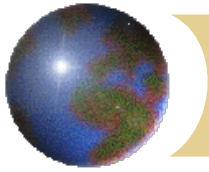


Non proliferation regime

- ✚ Treaties and International commitments
 - ▣ NPT the Nuclear Non Proliferation Treaty

 - ▣ The regional Nuclear Weapon Free Zone Treaties/ NWFZ (Tlatelolco, Rarotonga, Bangkok, Pelindaba, Semipalatinsk)

 - ▣ Bilateral agreements (US 123 and main supplier countries)



Non proliferation regime

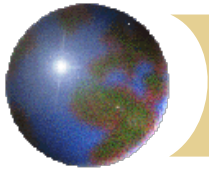
✚ Safeguards agreements

- ▣ International (INFCIRC 153, INFCIRC 66, and Voluntary Offers agreements (VOA))

- ▣ Additional Protocols

- ▣ Multilateral, Regional safeguards system; Euratom Treaty, chapter 7

- ▣ Bilateral (ABACC)

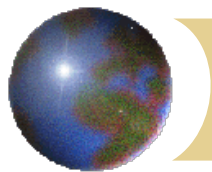


Non proliferation regime

✚ Export Controls

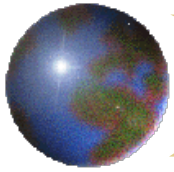
- ▣ Zanger Committee

- ▣ NSG Nuclear Supplier Group and guidelines (INFCIRC 254)



Existing framework ; assessing strengths and weaknesses

- ✚ Achievements in specific fields
- ✚ Some weaknesses/failures
- ✚ Global strengths
- ✚ Global weaknesses



Assessing the strengths and weaknesses

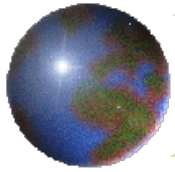
⊕ Achievements in specific fields

⊞ Safety;

- Chernobyl accident , 3 conventions within 10 years, WANO
- Fukushima, stress tests process and safety upgrades

⊞ Security ;

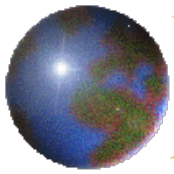
- Before 9/11 already CPPNM and INFCIRC 225, but
- post 9/11, ICSANT, UN 1540 , Adoption of CPPNM amendment
- NSS process and gift baskets



Assessing the strengths and weaknesses

■ Non Proliferation and safeguards

- India peaceful explosion in 1974 prompted NSG
- Discovery of Irak nuclear programme prompted 92+3 resulting in Additionnal Protocols and on going strengthening of export controls (NSG dual use list, fullscope safeguards)
- International cooperation on Illicit trafficking of nuclear material
- Reporting on Iran activities



Assessing the strengths and weaknesses

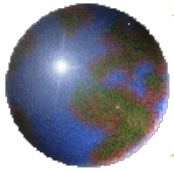
✚ But some major failures/weaknesses in specific fields

▣ Safety

- Fukushima
- No legally binding regular “inspection” requirement
- Adaptation to local changing environment?
- Finance issue?

▣ Security

- Design basis threat differs from State to State
- No common « standards », difficult to measure levels of achievements



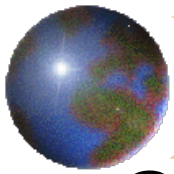
Assessing the strengths and weaknesses

❏ Security (continued)

- No full access to security measures, info
- No legally binding regular inspection requirement

❏ Non Proliferation and safeguards

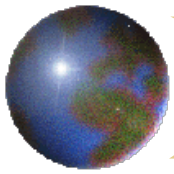
- North Korea
- Iran (failure or success?)
- NPT universality, break out scenario
- Financing needs



Assessing the strengths and weaknesses

✚ Global Strengths

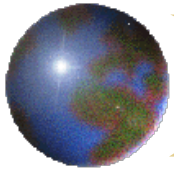
- ✚ Issues are internationally covered
- ✚ IAEA a stable, capable UN organization good tool, produced wide range of documents and guidance, contribute to diffusing « nuclear culture »
- ✚ Responsibility is assigned and need for international cooperation is recognized
- ✚ Different actors involved ; States, Industry, NGO
- ✚ Emerging safety, non pro, security culture?
- ✚ System has shown capacity to evolve



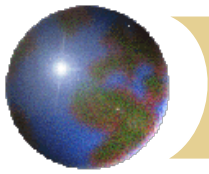
Assessing the strengths and weaknesses

✚ Global Weaknesses

- ❏ Universality issue
- ❏ Legal status, binding/non binding, signature/ratification
- ❏ Enforcement system (sanctions)
- ❏ No absolute standards (security, export controls, some room for interpretation and exceptions)
- ❏ Adaptable system but long lead time to transform proposals into agreed texts

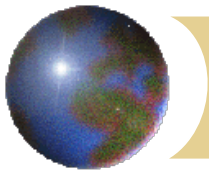


- ✦ Global Weaknesses (continued)
 - ❏ Achievements in the waste area at national and international levels still lagging behind
 - ❏ Global sensitivity to any event in world
 - ❏ Segmented area with sometimes overlaps and conflicting zones



Evolution Factors

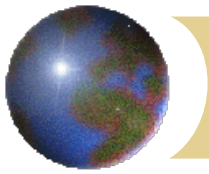
- ⊕ Climate change
- ⊕ Expansion of nuclear to Newcomers
- ⊕ New suppliers
- ⊕ New events
- ⊕ New technologies, Science (IT, chemistry, material)
- ⊕ Lack of resources for IAEA
- ⊕ Economic constraints, fierce competition
lack of solidarity and responsibility



- ⊕ Public confidence in the nuclear option is key to future development and calls for
 - ⊕ An improved, perhaps simplified regime

- ⊕ A further strengthening of the regime needs
 - ▣ Strengthened global and national governance structures

 - ▣ Development of a global safety, security and non proliferation culture and international cooperation



- ❑ Development of a global safety, security and non proliferation culture and international cooperation
- ❑ Expanded education and training capacities involving all stakeholders, covering both technical and non technical aspect
- ❑ Availability of waste repositories, demonstration of dismantling

AND

- ❑ Improved, timely, long term and consistent **public communication and involvement**