

Introductory remarks: the 20/20 Vision

IAEA Safeguards and Verification: A
Contribution to Nuclear Non-Proliferation,
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The purpose of our session

is to stimulate discussions on scientific and other issues relating to “the future of the IAEA Safeguards and verification: A contribution to Nuclear Non-proliferation”

The discussion horizon: 2020

Topics and Key Notes:

- Introductory remarks: the 20/20 Vision
- Future non-proliferation challenges
- The Next Generation Safeguards Initiative
- Nuclear Disarmament and the Verification Role of the IAEA
- Advanced Nuclear Fuel Cycles and Safeguards

Success requires vision and implementation

- There is no success in modern organizations without a strategic framework, where
 - a shared vision is a critical focal point,
 - the vision gives shape and direction to the organization's future.
- Building the Vision help understand different ways that future events could unfold,
 - this process should not be used to forecast what will happen.
- IAEA Vision 20/20 is timely, important and ambitious.
 - good opportunity to examine its activities and priorities
 - reflects the future: balance between expectation, workload, budgetary consequences

Background

- Extensive potential changes in the operating environment of the IAEA in horizon,
- The IAEA Director General Mr. ElBaradei initiated in late 2007 a comprehensive Secretariat review of the probable role of the IAEA up to the year 20/20 and beyond,
- Director General established a high-level independent Commission to advice on how the nuclear future might evolve to 20/20 and beyond, what the world is likely to demand of the IAEA and what steps needs to be taken to allow IAEA to fill those needs.
- A background report “20/20 Vision for the Future” was prepared by the Director General,
- The Commission assessed the challenges the IAEA will face, made recommendations and reported its findings in May 2008 on ways in which the IAEA can prepare to meet its expanding workload.

Safeguards will face inevitable changes by 2020 (1)

- With respect to the IAEA safeguards and verification, the main future challenges include
 - expanding use of nuclear energy
 - fast globalisation of the nuclear supply chains, and
 - the fate of the NPT.
- If the world economy grows as predicted, energy needs will grow faster than supply.
- New nuclear facilities are constructed, old ones modernized,
- Amounts of nuclear material and sensitive knowledge are growing and spreading,
- Nuclear supply chains and trade are expanding.

Safeguards will face inevitable changes by 2020 (2)

- Modern business models of nuclear related industries already include company activities and actors all over the world.
- Countries having no previous safeguards infrastructure or experience are planning to embark on nuclear.
- Bottlenecks in the nuclear manufacturing and fuel services may appear which can lead to national interests to master nuclear fuel cycle services thus possessing new risks for non-proliferation.
- Expanding safeguards operational environment is not only technical; it has political, economical, industrial and social dimensions that are interconnected and must be taken into account.

What will be the 2020 Safeguards Standard?

- Uniform criteria, methods, processes and practices, or double-, triple-standards?
- Why uniform standard as the starting point?
 - help promote a common evolution,
 - increasing workload, limited resources, complexity, globalization of supply chains, higher cost-effectiveness and productivity,
 - avoiding incompatible implementations, and
 - to tell the stakeholders the common set that is adopted by all the players,
 - provides a useful forum for getting diverging developers to sit at the same table.
- In effect a standard is a theory - unless put into practice,
 - is the standard workable, complete or accurate?
 - defects can remain hidden without practical experiences
- Any standard needs to be reviewed
 - good internationalization/localization is high on the list.
- All parties can realize mutual gains, but only by making mutually consistent decisions.
- Good 2020 Standard: the combination of a comprehensive safeguards agreement and an additional protocol.
- Is there enough room for the needed safeguards changes?

Implementation: Verification culture needs to change (1)

- IAEA's resources are unlikely to increase in the same pace with increasing verifications activities.
- That would imply
 - continuing changes to the verification culture including more information driven verification activities,
 - use of state-of-the-art technologies,
 - high calibre staff,
 - outsourcing (R&D etc.)
- With its expanding workload productivity requirements will also get higher.
 - examine modern ways of increasing efficiencies, finding synergies (with other regimes) and setting clear priorities (giving up some tasks).

Implementation: Verification culture needs to change (2)

- Transparency and cooperation with States, importance of competent, strong and independent regulatory body (safeguards, safety and security),
- Member States and the Secretariat transferring safeguards knowledge to those embarking on nuclear and/or developing their national regulatory systems,
- Nuclear vendors embedding safeguards features directly deep into their facility designs, systems and components will play important roles.

Also other safeguards innovations are needed

- 4th generation reactor systems,
- Development and implementation of international nuclear fuel cycle regime: IAEA's "Multilateral Approaches to the Nuclear Fuel Cycle".
 - No need for single state
 - to enrich uranium
 - to reprocess spent fuel; taking back spent fuel
- New verification technologies, advanced sensors.
- Increased use of simulation and modelling.
- Handling the data flows.
- Better use of best practices and SSAC/RSAC.

Some elements remain unchanged 2020

“Safeguards are a core mission of the IAEA and will continue to be central part of its work”

- the need for credible IAEA safeguards,
- high calibre inspectors, and
- the cooperation between IAEA, states (incl. S/RSAC) and nuclear industry.

Is IAEA's current Safeguards mandate enough 2020?

- Much of its expanding workload can be accomplished under existing authorities.
- However, Non-proliferation and disarmament are connected
 - Unfortunately, interest in nuclear weapons does not seem to be decreasing.
 - Reliance on nuclear weapons fuels proliferation
- The IAEA may be asked to carry out new responsibilities such as those related to disarmament which could require major resources.
 - Consequences and resources need to be carefully addressed.
- There are indicators of continuous tests for the NPT.
 - 2010 review conference will offer serious opportunities
 - Further ratifications of the Comprehensive Test Ban Treaty (CTBT)
 - Fissile Material Cut-off Treaty (FMCT) negotiation

Regarding Safeguards and Verification: Should/can/will the IAEA “stay ahead of the game”?

- Member States have to take into account changing circumstances:
 - Are our expectations for the IAEA realistic and in line with the powers and resources given?
 - What will be the starting point of 2020 safeguards, i.e. the standard?
 - Proliferation of nuclear capabilities and technology transfer,
 - Political will; mastering whole fuel cycle, expansion of enrichment techs.
 - Growing number of “virtual nuclear weapon states”
- IAEA’s “20/20 Vision” undertaking has already demonstrated the need, value and usefulness of joint discussion in the Agency across the departmental boundaries,
- There are lots of challenges within Agency’s current mandate and possibilities that the IAEA may also be asked to carry out new responsibilities; setting priorities.
- IAEA’s Vision 20/20 is ambitious. Unless good dialogue and hard work follows, the vision is in danger of remaining a piece of paper.