Avoiding the Failure of ‘Atoms for Peace’: Need for Ground Rules

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Overview of ‘Nuclear Renaissance’

- 438 nuclear power plans (approx. 370 GW(e)) in operation in 31 countries (as of the end of 2008)
  - Mostly located in OECD countries (80%)

- Supplying approx. 15% of electricity of the world

- 44 nuclear power plants under construction, more than half in Asia (2008)

- Enrichment facilities in 11 countries, commercial reprocessing plants in 5 countries (Japan is the only NNWS with reprocessing.)

- Since 2005, more than 25 countries expressed interests in nuclear power
‘Nuclear Dense’ East Asia

• Need for a multilateral arrangement?
  – North Korea: Dangerous nuclear game continues
  – China: Emergence of nuclear giant
    • More than 100 plants planned
    • Unknown scale of fissile material stockpile
  – Japan: Troubled in fuel cycle programs
    • Largest fuel cycle as a NNWS
  – South Korea: Rising ‘nuclear sovereignty’
    • Interested in reprocessing (discourse over pyro-processing)
  – Taiwan: Trouble in storage of spent fuel

– Is a multilateral arrangement solution to deal with such problems?
Middle East Driven into ‘Nuclear Renaissance’

• More than a dozen of countries in the Middle East interested in nuclear energy since 2006
  – Poor records of adherence to safety, security and safeguards (‘3S’) rules
  – Intensified business competitions in price and in conditionalities

• Economic and environment factors
  – Increasing energy demand, Energy security in the future
  – Climate change
  – Desalination

• “In the Shadow of Iran”?: Hedging ‘Nuclear’ Iran
  – Military threats
  – Regional power rivalries
  – Political and technological prestige
# Nuclear Plans and Regulations in Middle East

<table>
<thead>
<tr>
<th>Country</th>
<th>Scale</th>
<th>Year</th>
<th>Safeguards (AP)</th>
<th>Safety (CNS)</th>
<th>Security (CPPNM)</th>
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<td>3GWe</td>
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Source: Sharon Squassoni, “Realities and Risks of Nuclear Power in the Middle East,” 2008
Types of Proliferation Risks in Civil Use

• Fissile materials and their production facilities could be diverted into military purposes
  – Eg., CIRUS of India

• Civil programs could be exploited as a cover to conceal military activities
  – Eg., Iran’s nuclear program

• Withdrawal from NPT after developing nuclear capabilities through civil program
  – Eg., North Korea
Structural Problems of Proliferation

• Institutional deficiencies
  – Imperfection of IAEA Safeguards System
    • Additional Protocol: Far from universality, some countries determined not to ratify
    • No way to assess ‘intentions’ and rationality of activities
  – Vulnerable infrastructure in security and personnel management in many countries
    • Rising risk of nuclear terrorism
  – Technology floats rather freely
    • Loose export controls
    • Annoying past records (even of Japan)

• Political and security environment
  – Regional rivalries and instability (eg. Nuclear cascade in the Middle East?)
  – Nuclear Prestige
Additional Concerns of Nuclear Renaissance

• Need to consider consequences of intensified competition in nuclear business
  – Fierce competition might lower the standard of safety, security, and safeguards (Deterioration of ‘3S’ Norms) without proper rules.

• Rising ‘Nuclear sovereignty’
  – Aspiration for nuclear technology as a symbol of advancement
  – Intensified politicization of issue of ‘inalienable right’

→ Need for policy mechanisms and appropriate politics to deal with risks
Recently Proposed Instruments for Responding Proliferation Concerns

- Establishing new institutional mechanisms
  - **Bilateral controls** through 123agreements to supplement SG
    - Atoms for Peace ver. ME?
  - Strengthening **NSG guidelines**
    - Can exporting countries really agree?
    - Opposition by recipient states
  - **Multilateral Control** of Fuel Cycle and Assurance of Supply
    - No legal obligation to take part in
    - Take-back question
    - Risk in transportation

- **Political - Security measures**
  - Coordinated political actions vis-à-vis concerned states
    - Bringing multilateralism back in
    - Sanctions through UNSC?
  - **Dialogues** with such states
  - Providing security assurance to countries threatened (nuclear umbrella to Middle East?)
Integrated Approach for Non-Proliferation

**Institutional Approaches**
- NPT
- IAEA SG
- Export Controls
- PSI/CSI

**Incentive Approaches**
- Regional Security
- dialogue and negotiations

**Technological Approaches**
- Proliferation-Resistant Technology
- Verification, SG technologies

Multilateral control
Bilateral agreements

Integrating various approaches
considering pros and cons of these approaches

**Proliferation Problems**
- diverse types and route of proliferation
- involvement of various actors

- economic cost-benefit analysis
- political costs
- Feasibility
Lessons from Atoms for Peace

• Unable to establish a multilateral control of fissile materials: only in the statute of IAEA
  • Repeated attempts of multilateralization of fuel cycle resulted in reiteration of ‘inalienable right’... (eg. INFCE in 70s)

• Atoms for Peace was Atoms for Alliance
  – US shift in approach from multilateral control to bilateral control through bilateral cooperation agreements
    • In 1955 and 56, more than 50 bilateral cooperation agreements were concluded. (The Soviet followed the suit.)
    • As a result, proliferation seeds were spread around...
    • Bilateral arrangements could not control deals between third parties.
    • Cooperation used for strengthening alliance and friendships. (Non-proliferation was a secondary factor, which is different from the current trend.)
Pros and Cons of US 123 Agreement

• Pros
  – Recipient countries would politically commit themselves to refrain from pursuing national nuclear fuel cycle in exchange for the assurance of fuel supply
  – Diversion into military purpose would cause the stoppage of cooperation and withdrawal of materials and equipments
  – Expressing political commitments each other

• Cons
  – No legal requirement of ratification of AP, nor of introduction of near-real-time surveillance system
  – Not applied to transactions with third parties
    • Can withdrawal of US cooperation be an effective deterrent?

• Question on universal application of 123 agreement: India, UAE may be OK, but what about other countries?
Pros and Cons of Multilateral Approaches

• Pros
  – At least it can provide one of criteria of proof of non-interest in military diversion
  – Give economic incentives
  – Strengthen cooperation among like-minded countries

• Cons
  – Remain as a voluntary arrangement
    • Determined proliferators would not join.
    • Cannot punish countries not joining the arrangement?
  – Without take-back arrangement for spent fuel, it cannot be an attractive offer for countries with a small sized nuclear program: that the United States cannot do.
Challenges Ahead: Agenda for the Alliance

• Need for introducing **universal rules and regulations in areas of ‘3S’** (but not easy)
  – In particular, universalization of Additional Protocol
  – Code of conduct in international transaction in nuclear business
  – Export control (NSG’s new guidelines)
  – They also serve setting a level playing field for American and Japanese nuclear industries.

• Increasing **transparency and accountability** in nuclear programs and industry
  – Setting a **criteria of assessing ‘intention’ = multilateral control** could be helpful even if it is voluntary one.
  – Evaluating economic and technical **rationalities and feasibility**
  – It may become a serious challenge for Japan...
Further Challenges Ahead

• Addressing regional security concerns
  – Strengthen both sticks and carrots to countries concerned

• Beyond ‘rallying round the flag’ or ‘show the flag’!
  – In particular, re-establishing the confidence on U.S. leadership role
  – Sound and strong partnership among like-minded countries: US-Japan global partnership should take the lead
  – How to avoid the serious divide between ‘nuclear haves’ and ‘have-nots,’ which might be created by new mechanisms: The problem is that the logic does not matter… : Can Japan play a role?
Thank you very much