Critical Monitoring and Verification Issues In Northeast Asia

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This paper addresses critical monitoring and verification issues arising from the proposal of Morton M. Halperin on a new approach for the security in Northeast Asia[1].

Northeast Asia is a region, where nuclear power is and remains in the core of national energy plans, but the nuclear landscape in Northeast Asia continues to change. According to the latest IAEA projections[2], continued and expanded growth of nuclear power is expected to remain on course in the region despite the Fukushima Daiichi nuclear accident. Globally, the strongest growth of nuclear power is also in the Far East, mainly in China and the Republic of Korea. The region's nuclear capacity is expected to grow from 80 GW(e) at the end of 2011, ranging from between 153 GW(e) on the low end, to 274 GW(e) on the high end estimate, by 2030.

Japan and China have commercial scale uranium enrichment and spent fuel reprocessing, while Republic of Korea is seeking such capabilities in its talks on nuclear cooperation with the US. China is a NPT nuclear weapons state. North Korea is building nuclear weapons and has conducted two nuclear detonations. The latter has recently also engaged to uranium enrichment activities, which appear to be growing. With their nuclear infrastructure Japan, and increasing Republic of Korea can be considered being nuclear threshold states.

The varied nuclear positions of the various Northeast Asian countries, state-to-state relations, and related security issues are important facets that frame the topic when addressing verification issues for a Northeast Asian nuclear weapons-free zone. This paper outlines in broad terms verification elements required for such a zone.

Elements of Verification

There is no one single model for Nuclear Weapons Free Zones (NWFZ). Each existing treaty had introduced elements, including creative legal arrangements, and unique features depending on the specificities of each zone.

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[1] Morton H. Halperin, "A New Approach to Security in Northeast Asia: Breaking the Gridlock," The Asia-Pacific Journal, Vol 10, Issue 34, No. 3, August 20, 2012.

[2] Energy, Electricity and Nuclear Power Estimates for the Period up to 2050, Reference Data Series No. 1, IAEA, 2012.

1. Dismantlement of nuclear weapons programs

The key challenge will be a verifiable, and irreversible dismantling of DPRK's nuclear weapons related capabilities. This should also include measures to assure that nuclear materials released from the weapons programs are used only for peaceful purposes and that such program is not reconstituted.

The international community has such experiences from dismantlement of nuclear weapons programs of Iraq, Libya, and South Africa. The Pelindaba Treaty that sets out Africa's NWFZ, refers to IAEA verified dismantlement and destruction of nuclear explosive devices manufactured by South Africa prior to the entry into force of the said Treaty. The dismantlement of that program was done unilaterally by South Africa, but the International Atomic Energy Agency (IAEA) verified it only after the former's NPT safeguards agreement entered into force[3]. It is worth noting that the IAEA's role did not only include verification of the inventory of nuclear material originating from the nuclear weapons program, but also confirming the historical production of nuclear material for the program as well. IAEA verification also extended to the dismantlement of nuclear weapons related infrastructure. To ensure that the program was not reconstituted, some dual use equipment was also subject to long term monitoring by the IAEA. For its part, South Africa implemented a policy of transparency by granting additional access to relevant sites, equipment and people upon request by the IAEA. These transparency visits continued several years afterwards as an additional measure, even when the Additional Protocol was already in force, to build confidence.

2. Verification Standard

IAEA Safeguards form the basis for verification of all the five NWFZ. The IAEA Comprehensive Safeguards Agreement (CSA) with the Additional Protocol (AP) could serve as the verification basis for a Northeast Asian NWFZ. However, provisions for the irreversible and verifiable dismantlement of existing nuclear weapons programs need to be included. This would also mean that nuclear material accountancy records and reports and information on the design of facilities would differ from those of the CSA as its provisions would be insufficient to address for instance historical production of nuclear material and dismantlement. Likewise, confidentiality undertakings would need to be more rigorous, given the proliferation sensitive information involved.

3. Delivery vehicles

None of the current NWFZ Treaties have provisions for delivery vehicles, but such an element is foreseen for the WMDFZ Treaty in the Middle East. Internationally, there are a few treaties that

[3] A. von Baeckmann, G. Dillon, and D. Perricos, Nuclear verification in South Africa, IAEA Bulletin,1, p. 42-48, 1995.

deal with this issue, but with limited enforcement mechanisms. The original focus of the Missile Technology Control Regime (MTCR) on missiles for nuclear weapons delivery was extended to cover the proliferation of missiles for the delivery of all types of weapons of mass destruction, i.e., nuclear, chemical and biological weapons. The MCTR places particular focus on rockets and unmanned aerial vehicles (UAV) capable of delivering a payload of at least 500 kg to a range of at least 300 km and on equipment, software, and technology for such systems. The issue is very complex when we note the civilian and non-nuclear military uses of UAVs and the delivery mechanisms of tactical nuclear weapons.

4. Verification organization

It is obvious that regional as well as multilateral support would be required to uphold a treaty. This goes into all sorts of details that range from verification activities to dispute mechanisms to financing the dismantlement of current weapons of mass destruction related capabilities

For NWFZs, there are a few regional mechanisms to look at. The Pelindaba Treaty created a mechanism for compliance through the establishment of the African Commission on Nuclear Energy, or AFCONE, but it is not yet fully operational. In Southeast Asia, the Bangkok Treaty does not have a permanent Secretariat. Instead it operates under the rotating secretariat/chairmanship of ASEAN.

Models that involve regional nuclear material verification are Europe's EURATOM and Brazil and Argentina's ABACC. However, there models cannot be applied directly, since they are not crafted to confirm the absence of undeclared nuclear material and activities – for the case of EURATOM since it involves nuclear weapon states on its territories and for the case of ABACC, that it was primarily a bilateral treaty of confidence building.

5. Dealing with non-compliance

When looking at the NWFZs, the Annex of the Pelindaba Treaty on complaints procedure and the settlement of disputes in the case of nuclear ambiguity have a provision for members to request the IAEA to conduct an inspection, and the Commission can designate its representatives to accompany the Agency's inspectorate team. Similar provisions to such recourse can also be found in the Bangkok Treaty. Provisions are good to have and should be included. Nonetheless, it is a separate issue whether and how its execution will take place as the recent case of nuclear ambiguity on Myanmar's alleged nuclear activities, has demonstrated.

There are no specific criteria to establish non-compliance in the IAEA. Article XII.C of the IAEA Statute requires the Director General to transmit to the Board all specific "non-compliance" reports made by the inspectors of the safeguards department. It is then for the Board, which is a political body, to find whether or not the non-compliance reported by the Secretariat does indeed constitute non-compliance under Article XII.C of the Statute, and the

provisions of the CSA. The Board can also use its judgment whether and when the non-compliance needs to be reported to the United Nations Security Council.

The IAEA Statute does again not spell out the criteria which the Board should use to draw such conclusion. One can, therefore, assume that the criteria the Board should use is not necessarily be the same as those used by the Secretariat in determining whether technical non-compliance needs to be reported.

One could argue that the Board's discretionary approach to non-compliance findings is unsatisfactory. Hence there have been calls for a common understanding on the definition of non-compliance. However, it is unclear that reducing the Board's discretion is necessary noting that it might be difficult establish all diversion scenarios and security risks associated with them in advance; no one size fits all. Due to the consensus driven decision making in the IAEA, it is not very likely that that the Member States would agree to this. However, this is important for the drafters of the Northeast Asian NWFZ treaty to think about in handling issues of non-compliances.

6. Nuclear Cooperation

There are several interim cooperative actions that can take place in building up a nuclear weapons free zone in Northeast Asia. Three countries, China, Japan, and ROK are all exporting nuclear reactor technology. All of them rely heavily on foreign uranium enrichment services. North Korea is rich in mineral resources; it has uranium and rare earths; commodities, which the other parties need. In all countries the final disposal of spent fuel or its recycling needs still to be completed. This might be an area for joint Joint Ventures for uranium enrichment, where, industry, the technology holder, can play a pivotal role. One could also think of creation of centers of excellence or even organizations similar to the EURATOM Supply Agency, or the Joint Research Centers of the European Commission.

Conclusion

Careful consideration should be given as to what to include in the actual Treaty, and appropriate adherence to additional treaties or regimes relating e.g. to the means of delivery. Further thoughts should be given to regional verification system, which could complement the IAEA verification regime, and act as an additional confidence building measure. Recognizing the unique challenges in creating a Northeast Asian Nuclear Weapons Free zone, identifying steps and clauses that would assist a phased-in approach to constructing a nuclear weapons free zone amongst willing parties will impact on the verifications approach undertaken. In creating such a zone, it is important address as key the irreversible, and verifiable dismantling of the DPRK's nuclear weapons program, which could serve also as a benchmark for nuclear disarmament in future. Northeast Asia further could also serve as a first multinational approach to ensure uranium enrichment and spent fuel handling of services.