

Verifying the Removal of Nuclear Weapons: Past and Future

Practical Aspects of Nuclear Disarmament Verification

27 April 2018

Wilfred Wan, Researcher



UNIDIR

Outline

- How has verification of removal or elimination of nuclear weapons been done in the past?
- What are the basic issues for such a process?

Verification of Removal or Elimination

- Indirect means of verification
- Existing cases are very different
- Value of a more expansive toolkit

Warhead Elimination (Stockpile Reductions)



Sandia National Laboratories: new radiation detection equipment being tested for New START monitoring. Source: https://commons.wikimedia.org/wiki/File:INF_inspection.JPG

- Strategic Arms Reduction Treaties (START I and New START)
- Strategic Offensive Reductions Treaty
- Presidential Nuclear Initiatives
- Verification mechanisms, where applicable, center on delivery systems

Warhead Removal from a Class of Delivery Systems

- Intermediate-Range Nuclear Forces (INF) Treaty
- Presidential Nuclear Initiatives (including removal from surface ships and submarines)



Soviet INF inspection of a Tomahawk ground-launched cruise missile
Source: https://commons.wikimedia.org/wiki/File:INF_inspection.JPG

Withdrawal of Weapons from States

- Post-Soviet states and Warsaw Pact states (e.g. Belarus, Kazakhstan, Ukraine)
 - Removal of non-strategic weapons
 - Strategic launchers and warheads
 - Mechanics of withdrawal process
- U.S. cases: removal from ROK, removal and/or consolidation from NATO states



Removal of radioactive materials from a former nuclear reactor in Kazakhstan, U.S. National Nuclear Security Administration. Source: <https://www.npr.org/2010/11/17/131386797/moving-kazakh-nuclear-cache-a-massive-undertaking>

Limitations of Verification Past

- No experience with direct verification of warhead removal
- Instead, use of proxies (delivery systems) **or** claims of action
 - Interpreted as verification and accepted...
- Why is this problematic?

Basic Issues

- Verification and nuclear weapons
- Circumstances and set-up
- Agreement on procedures
- Institutional capacity (IAEA or others)

Basic Issues II

- Potential involvement of 'new' states
- Legal and operational access
 - IAEA Additional Protocol... and also?
- Incorporation of 'host state' and 'warhead owner' situations

Takeaways

- Direct verification of nuclear weapons removal lacking in past
- Verification as a powerful tool for nuclear disarmament
- Potential for developing procedures for more scenarios