

# Comparative Analysis of CTBT

## Limitations and Strengths

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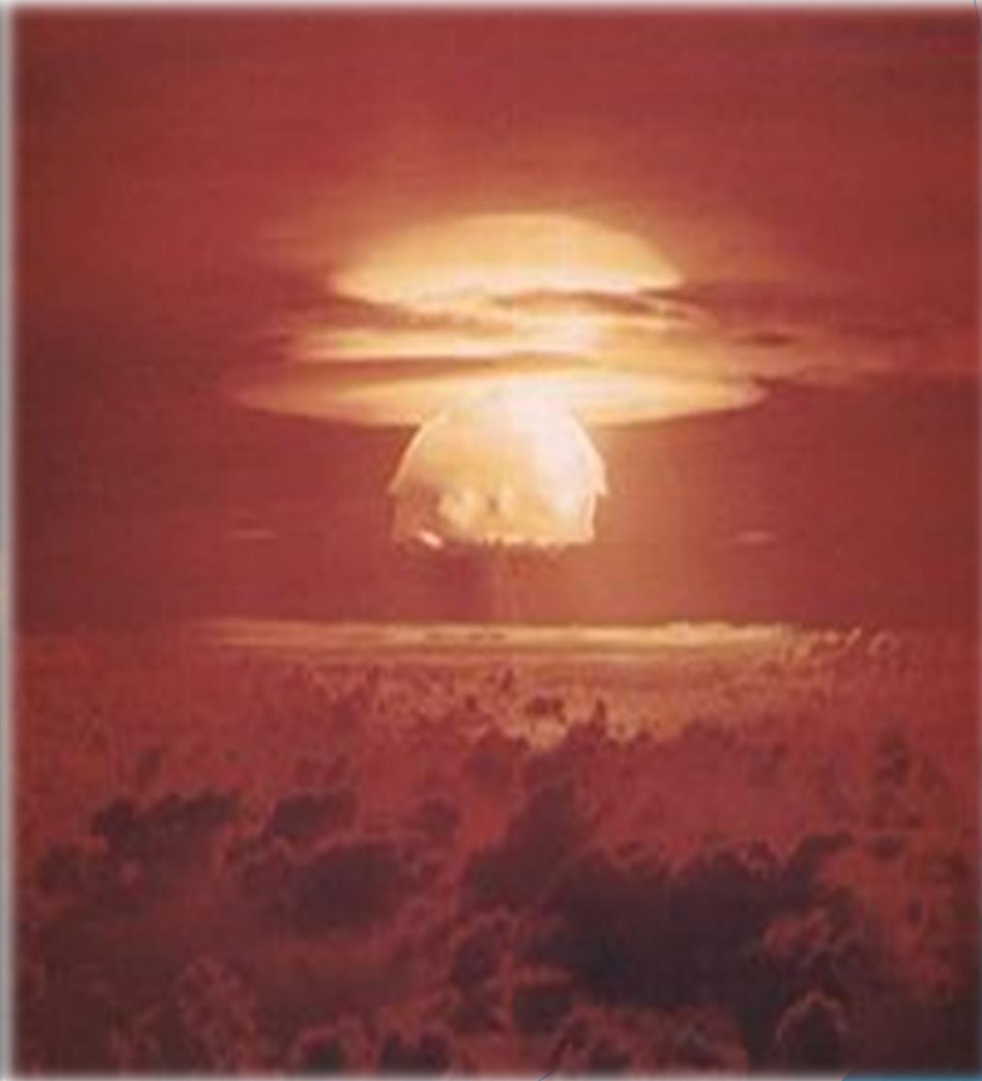
# Presentation Outline

- What necessitated nuclear non-proliferation and arms-control measures?
- Comparative Analysis of CTBT
  - PTBT
  - CWC
  - NPT
- Challenges for CTBT
- Opportunities

# What necessitated nuclear non-proliferation and arms-control measures?

- 50s and 60s notable nuclear tests became primary motivator for arms-control and non-proliferation treaties.
- Andrei Sakharov, designer of Tsar Bomb, proposed to put ban on nuclear weapons testing in the outer-space.

# Castle Bravo vs Russian H-Bombs



# Comparative Analysis

# Comparative Analysis

- Why arms-control and non-proliferation treaties like PTBT, CWC and NPT are more successful than CTBT?
  - ❑ Norms-based consensus
  - ❑ Mutual trust
  - ❑ Built-in mechanism
  - ❑ Comprehensive approach (CWC)

# PTBT

- Became basis for CTBT
- Primary motive
  - ❑ Prevention of environmental fallout
- Non-Intrusive nature
  - ❑ Inherent trust and confidence was built-in among state parties
- Redundancy of PTBT
- Short comings
  - ❑ PNE
  - ❑ Inconsistent with NPT

# CWC

- Comprehensive and all inclusive approach - accomplished disarmament goal to chemical weapons
- Norms-based consensus
- Scuttled vertical and horizontal proliferation
- Structural resemblance of two treaties
  - ❑ Identical structure with two different goals and objectives
  - ❑ Verification and compliance mechanism

# Continued..

- ❑ Executive and Technical Secretariat
- ❑ National Authority - Implementing Organization
- ❑ Confidence Building Measures
- ❑ If settlement is not achieved, matter would go to ICJ
- ❑ Independent Inspectors

# NPT

- Sui generis of this treaty to prevent horizontal proliferation of Nuclear Weapons.
- It struggled to prevent vertical proliferation among NWS and horizontal proliferation among Non-Nuclear Weapon States.
- Primary outcome of CTBT is not constraining the attainment and possession of nuclear weapons which is as such NPT's fundamental objective. But CTBT restrains the potential future advancement of nuclear weapons technologies and capabilities.

# NPT

- Similarity
  - ❑ Emphasized focus on inspection and verifications measures.
- 2000 NPT Review Conference conditioned sanction of PNEs with CTBT.
- What reinforced NPT (prevention of horizontal proliferation)
  - ❑ Extended Deterrence
  - ❑ Economic and diplomatic costs
- What could compromise NPT objectives?
  - ❑ Extension of NSG Waiver to India which could indirectly lead to vertical proliferation by a non-NPT state.

# Challenges for CTBT

- Custodian and Stewardship Program
- Indo-US Nuclear Deal
- Security-driven Concerns
- “Review of the Treaty” and issue of PNEs
- Computer Simulations

# Strength and Opportunity

- IMS detection capabilities of nuclear explosions
  - North Korea nuclear test case
- The added value of IMS data for disaster mitigation became evident in 11 March Japan Disaster, as seismic and hydroacoustic stations enabled national tsunami warning centers in the region to issue timely warnings.
- Radionuclide stations provided first-hand information on the emissions from the stricken power plant and their dispersal worldwide.

# Conclusion

- ▶ Needs for more integrated and comprehensive approach for arms control and non-proliferation treaties.
- ▶ Lack of political will and commitment on behalf of major proponents of disarmament who have nuclear weapons as well.

**Thank You**

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