LA-UR-20-24338
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Title: Treaties and Arms Control

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Intended for: New Employee Training (NET)

Issued: 2020-06-16

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Treaties and Arms Control

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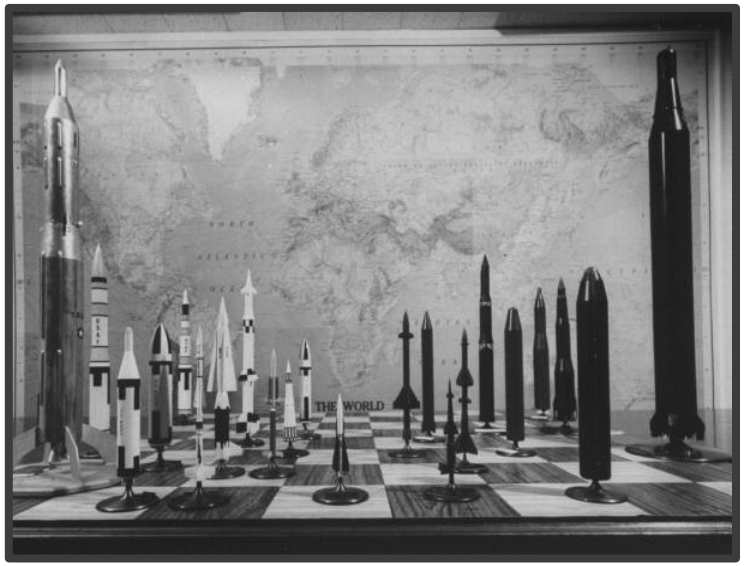
Presentation Overview:

- What is Arms Control?
- Aims and Methods of Arms Control
- Treaty Process
- The Treaties
- New START Inspections
- Future Treaty Considerations: Strategic vs. Nonstrategic
- Questions

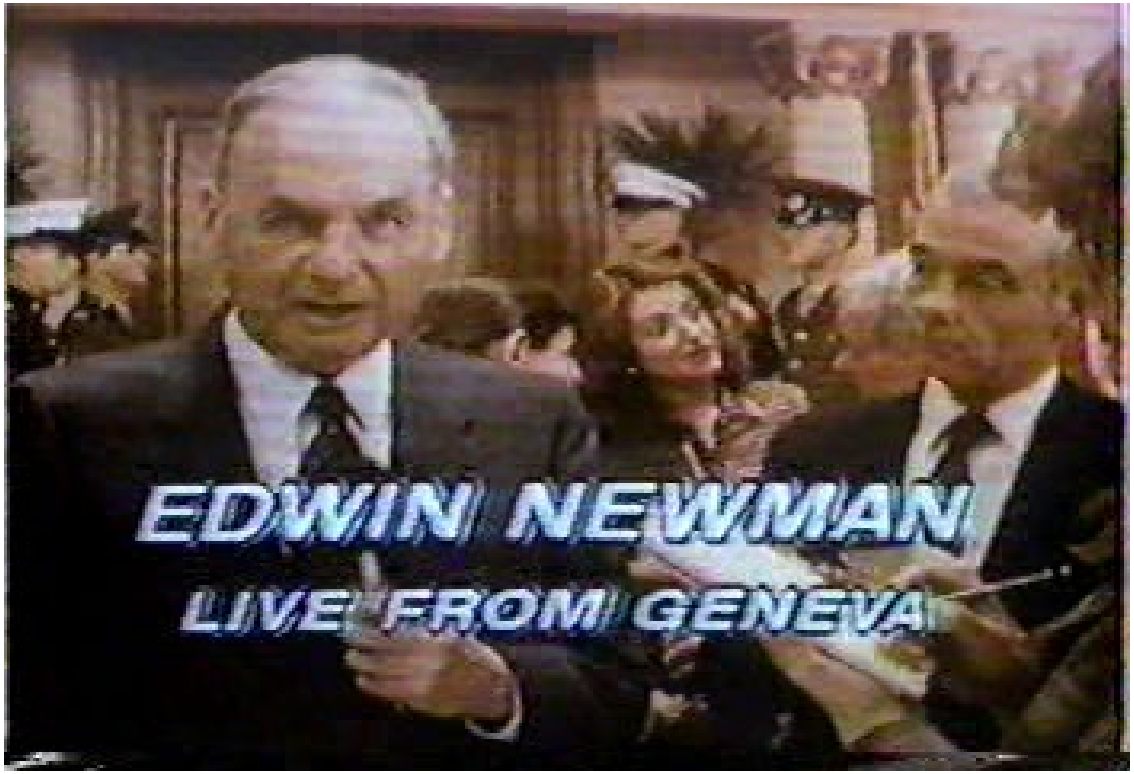
What is Arms Control?

- Any plan, treaty, or agreement that takes measures to limit the number, size, or type of weapons in the armed forces of the participating nations.
- Arms control is any form of cooperation among potential adversaries aimed at reducing:
  - the *likelihood* of war;
  - the *costs* of preparing for war;
  - the *damage* should war occur
- Primary goals are deterrence, stability, and defense at lower cost



Arms Control: Good or Bad?

- Do arms control efforts work?



Why Engage in Arms Control?

- Recognition of common interests
  - Manage uncertainty and risk
  - Shape U.S. nuclear policy, strategy, and force structure
  - Take advantage of opportunities to shape the future rather than react to it
- Transparency = Stability
  - Confidence building, reassurance

The Treaties

1958 Test Moratorium
1959 Antarctic Treaty
1963 Hot Line Agreement
1963 Limited Test Ban Treaty
1967 Outer Space Treaty
1967 Latin America Nuclear Free Zone Treaty
1968 Nonproliferation Treaty (NPT)
1971 Seabed Treaty
1972 Strategic Arms Limitation Treaty I
1972 Anti-Ballistic Missile Treaty
1974 Threshold Test Ban Treaty
1976 Peaceful Nuclear Explosions Treaty
1977 Environmental Modification Convention
1979 Strategic Arms Limitation Treaty II
1985 South Pacific Nuclear Free Zone Treaty
1987 Intermediate-Range Nuclear Forces Treaty - INF
1988 Ballistic Missile Launch Notification Agreement
1991 Strategic Arms Reduction Treaty
1993 Strategic Arms Reduction Treaty II
1996 Treaty of Pelindaba
1996 Comprehensive Test Ban Treaty
2002 Strategic Offensive Reductions Treaty
2005 International Convention for the Suppression of Acts of Nuclear Terrorism
2011 New START Treaty

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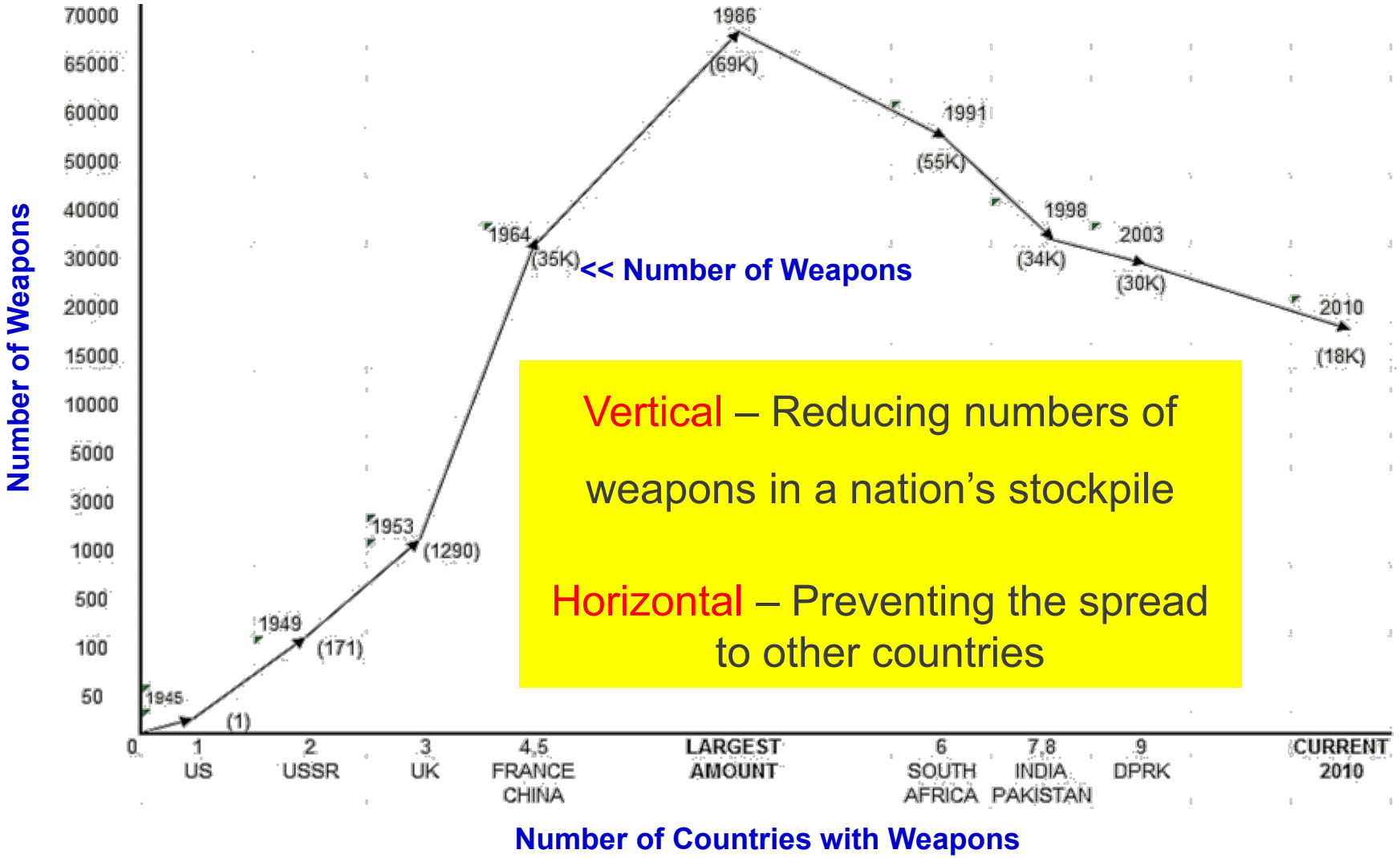
Vertical vs. Horizontal Buildup



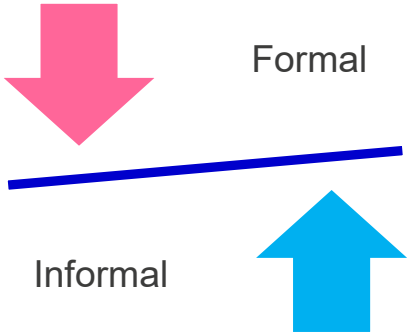
Vertical – Reducing numbers of weapons in a nation's stockpile

Horizontal – Preventing the spread to other countries

What are the Methods?

- **Formal**
- Treaty

- **Informal**
- Hand Shake
- Agreement
- Convention
- Regime
- Protocol
- Unilateral Measure
- Framework



What is the real difference?

U.S. Constitution, Article VI: "This Constitution … and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land"

What Is the Treaty Process?

- Negotiate
- Document
- Signed (by the President)
- Ratified (consent only by the Senate)
- Entered into Force (EIF)
- Duration
  - Example: New START Treaty

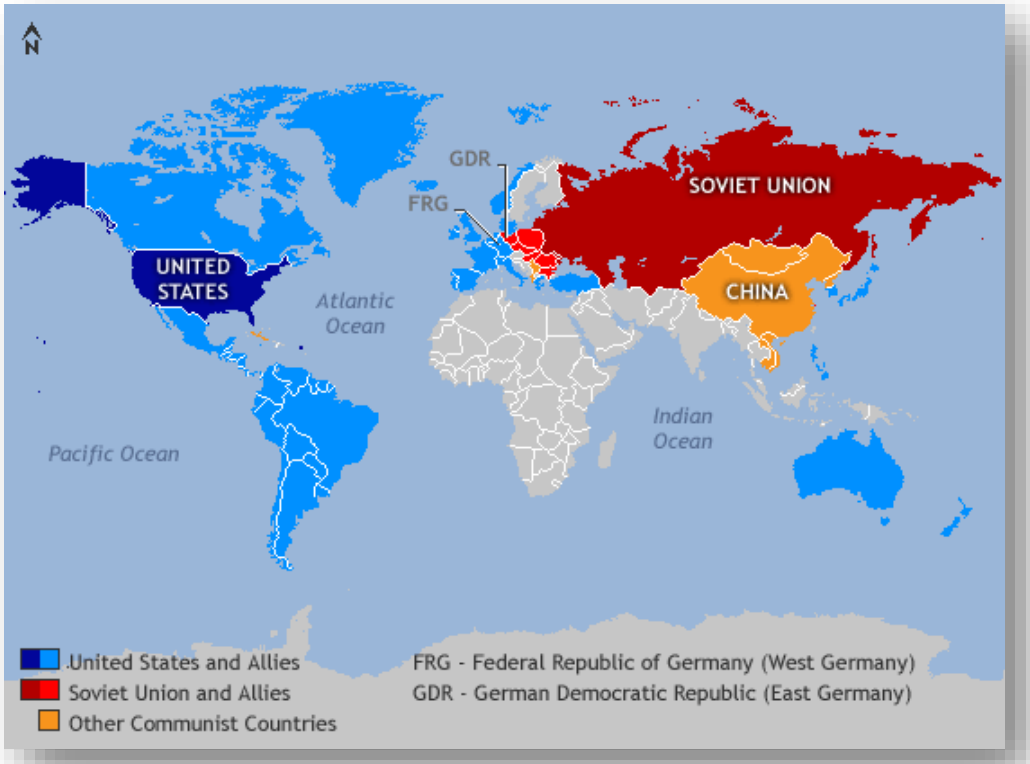
Nuclear Free Zones

- **Regional**
  - Antarctic Treaty, 1959
  - Latin American Treaty, 1967
  - South Pacific Nuclear Free Zone (NFZ) Treaty, 1985
  - Southeast Asian NFZ Treaty, 1995
  - African Nuclear Weapons Free Zone Treaty, 1996

- **Global**
  - Outer Space Treaty, 1967
  - Nuclear Nonproliferation Treaty, 1968
  - Seabed Treaty, 1971

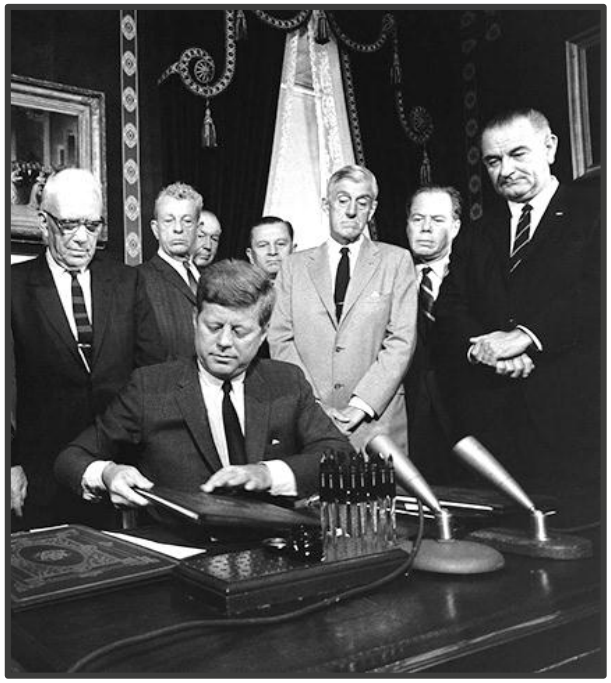
Informal Moratorium on Testing

- November 1958– September 1961
  - U.S., U.K., and U.S.S.R. observe an informal moratorium on nuclear tests
  - Prohibits nuclear weapons tests "or any other nuclear explosion" in the atmosphere, in outer space, and under water



Limited Test Ban Treaty (LTBT)

- EIF Oct 10, 1963
- Prohibits nuclear weapons tests "or any other nuclear explosion" in the atmosphere, in outer space, and underwater
- Does not prohibit underground nuclear explosions…if they don't cause "radioactive debris to be present outside the territorial limits of the State" under whose jurisdiction or control the explosions were conducted



Hot Line Agreement

- EIF June 20, 1963
- Provided direct communications link between U.S. and Soviet (now Russian) heads of state
- Reduces the risk of a nuclear exchange stemming from accident, miscalculation, or surprise attack
- Modern day equivalent: India and Pakistan establish nuclear hotline June 20, 2004

Uses of Hot Line:

President Johnson	1967	Six Day War Middle East
President Nixon	1971	India-Pakistan Conflict
	1973	Yom Kippur War
	1973	Invasion of Cyprus by Turkey
President Carter	1979	Soviet Invasion of Afghanistan
President Reagan		Twice discuss event Poland/Lebanon
President Bush 41		Persian Gulf War
President Bush 43		Invasion of Iraq

Nuclear Non-Proliferation Treaty (NPT)

- Signed 1 July 68
- EIF 5 Mar 70
- Five year review cycle
- 189 states are Parties to the Treaty
- Made “Permanent” at 1995 Review Conference
- Last review conference May 2015
- NPT is only 5 pgs. – 2,223 words!

Cornerstone of international effort to curb spread of nuclear weapons

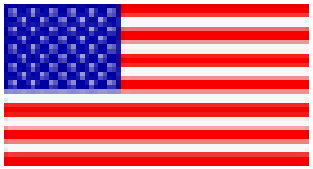
Nuclear Non-Proliferation Treaty - 1968

- The treaty covers three mutually reinforcing pillars:
  - Peaceful uses of nuclear energy
  - Nonproliferation
  - Disarmament
- Defined what is a legal Nuclear Weapons State
- Provided security guarantees for Non Nuclear Weapon States (NNWS)
- Provided incentives to sign

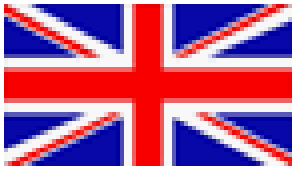
NPT Article IX, Paragraph 3

"For purposes of this Treaty, a Nuclear-Weapon State [NWS] is one which has *manufactured* and *exploded* a nuclear weapon or other nuclear explosive device prior to January 1, 1967"

1945

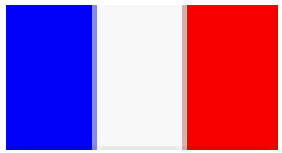


1952



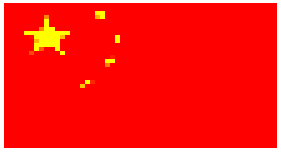
1949

1960



- United States
- United Kingdom
- Union of Soviet Socialist Republics
- France
- People's Republic of China

1964



Nuclear Non-Proliferation Treaty

- **Non Nuclear Weapon States**
  - Acknowledge they are a NNWS
  - Disband ALL nuclear weapons research
  - Cannot pursue nuclear weapons

- **Nuclear Weapon States**
  - Promote peaceful uses of nuclear energy
  - Provide NNWS access, under safeguards, to nuclear technology and research
  - Pursue comprehensive arms control and nuclear disarmament

NPT Security Assurances

"Positive" security assurance	"Negative" security assurance
U.N. Security Council Resolution 255 (1968), U.S., UK, and Soviet Union pledged to seek immediate Security Council action to provide assistance to any NPT NNWS that was the object of a nuclear threat.	The U.S. will *not* use nuclear weapons against any NNWS member of the NPT, *unless* it is attacked by a NNWS in alliance with a nuclear weapons state.

Quiz: NPT Signatories

India

Pakistan

Iran

South Sudan

North Korea

North Korea NPT Withdrawal

- North Korea announced its withdrawal from the NPT on January 10, 2003
- Withdrawal "will come into force automatically and immediately" on the next day
- North Korea stated that it had suspended its 1994 withdrawal from the treaty on the last day of the required three-month notice period
- Did not need to give a further notice to other NPT parties and the Security Council as required under Article X of the treaty

Strategic Arms Limitation Talks I (SALT I)

- **SALT I, 1972**
  - First vertical arms control treaty
  - Interim Agreement
    - Froze the number of ICBMs/SLBMs to 1972 levels
    - Limited in duration and scope (five years)
  - Led to direct talks with U.S.S.R.

Anti-Ballistic Missile Treaty, 1972

- **Permits two ABM deployment sites (Protocol limited this to one site, nation's choice)**
  - Capital city (Moscow)
  - ICBM field of choice (Nekoma, ND)
- **Limitations**
  - Sites must be at least 1,300 km apart
  - No more than 100 interceptors at one site
  - No more than 100 launchers at one site
  - Radar cannot provide national coverage
- **If implemented, could remove first strike options**

Anti-Ballistic Missile Treaty, 1972

- Safeguard Complex: Nekoma, ND
- Operational: 1 Oct 75–Feb 76 (four months)
- Cost: $5 billion ($31.7 B in 2011 dollars, estimated)

Long Range RADAR

SPRINT

SPARTAN

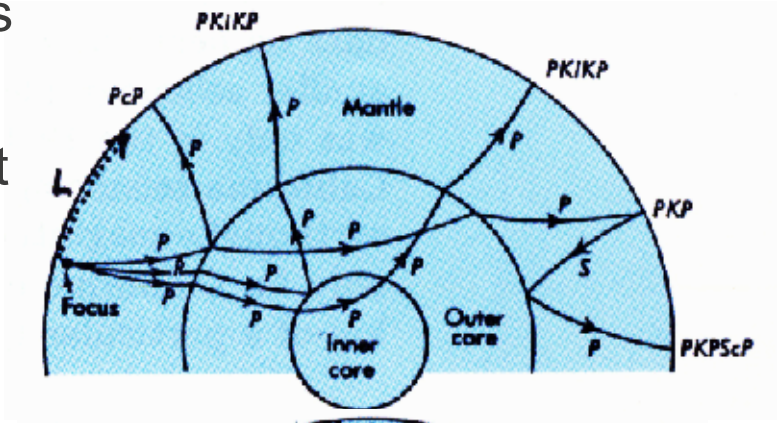
Threshold Test Ban Treaty, 1974

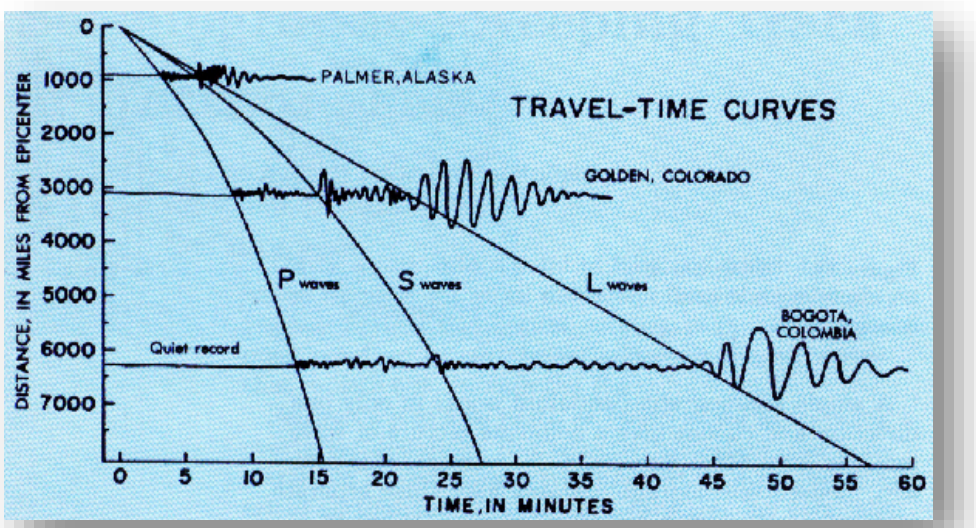
- **Signed July 3, 1974**
- **EIF December 11, 1990**
- **Limited underground testing**
  - 150kt max limit after March 1976
    - Easy to detect above 150kt
  - One or two slight, “unintended” breaches allowed

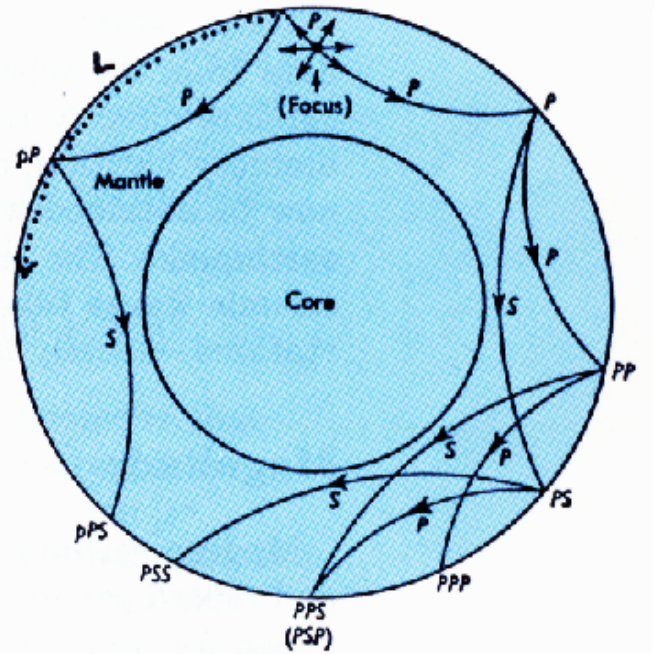
EIF: 1990
Duration: automatically renewed every five years unless withdrawal notification

Threshold Test Ban Treaty Geologic Science

- Scientific measurements for earthquakes
  - P/S/L Waves
  - Uses seismographs located throughout the world







Intermediate Range Nuclear Forces Treaty, 1987 (INF)

- EIF, June 1988
  - Eliminated SRBM, MRBM, and IRBM delivery systems
    - SRBMs (range of 500-1,000 km) within 18 months
    - MRBM/IRBMs (range of 1,000–5,500 km) by June 1991
  - Eliminated support structure and equipment
  - Verification: On-site inspections, and continuous portal monitoring

- Treaty Suspended February 2019

- US formally withdrew August 2019

***Note*: Inspections and monitoring ceased on May 31, 2001**

Intermediate Range Nuclear Forces Treaty (INF)

Missile Type	U.S.	U.S.S.R
SRBMs	Pershing 1A	SS-12/-23
MRBM/IRBMs	Pershing II/GLCM	SS-4/-5/-20
Non-Deployed	Pershing 1B	SSC-X-4
Total Missiles Destroyed	**846**	**1,846**

Only treaty to completely remove an entire class of weapons

U.S. Withdraw from INF

Examples of Russian New Nuclear Modernization

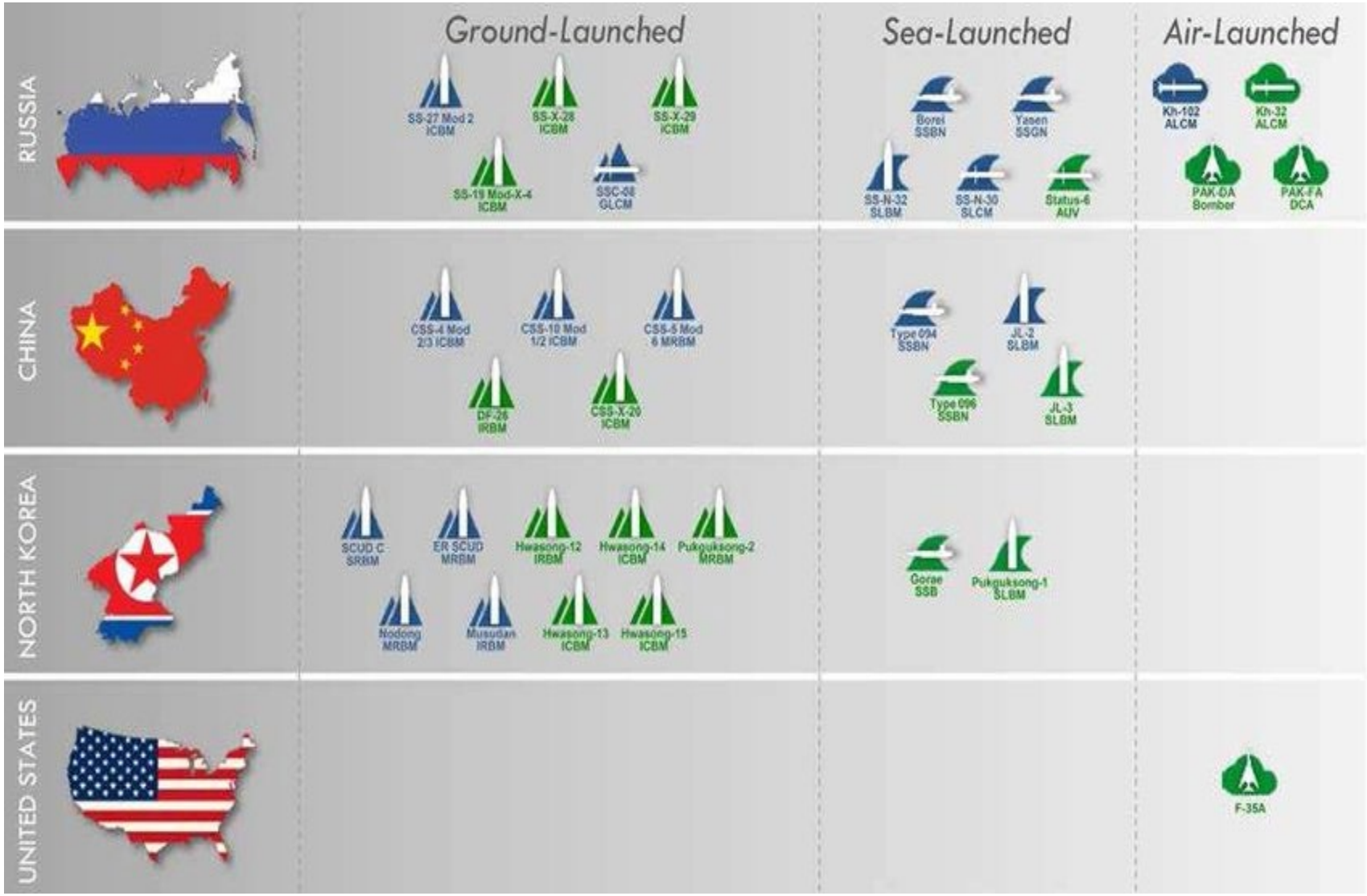
Satan II RS-28-Sarmat 24 Warhead Capable ICBM

9M729 SSC-8 Intermediate Range Missile (INF Treaty Violation before the treaty ended)

Kh-47M2 Kinzhal Air-Launched Ballistic Missile (ALBM)

Kanyon (Status-6) Nuclear Powered & Nuclear-Armed Torpedo

2018 Nuclear Posture Review



Lisbon Protocol, 1992

- Bi- or Multi-lateral?
  - Belarus, Kazakhstan, and Ukraine were born nuclear
  - All former states would transfer nuclear weapons to Russia.
  - **Future?**
  - On 8 March 2019, the Foreign Ministry of Ukraine announced that since the United States and Russian Federation had both pulled out of the INF treaty, it now had the right to develop intermediate-range missiles, citing Russian aggression as a serious threat to the European continent, and the presence of Russian nuclear-capable missile systems in Crimea

Maza, Cristina (8 March 2019). "Ukraine has the right to develop missiles now that Russia-U.S. nuclear treaty is canceled, Kiev says". Newsweek. Retrieved 13 March 2019.

Comprehensive Test Ban Treaty (CTBT)

1996, Terms:

- Each state party undertakes not to carry out any nuclear weapon test explosions or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control

- Each state party undertakes to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion
  - Would end <u>all</u> nuclear explosions
  - Has not Entered into Force

Comprehensive Test Ban Treaty

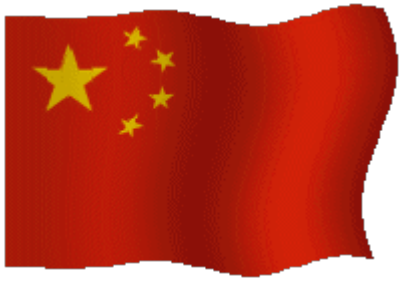
EIF:

- 180 days after the date when 44 specific countries (listed in annex 2 of treaty) that formally participated in the treaty negotiations and possess nuclear power reactors and/or nuclear research reactors have deposited their instruments of ratification
- Status:
- Of 196 countries -183 signed,
  - Of 183 signed -164 ratified
- Of 44 Annex 2 countries-
  - 41 signed, 36 ratified

Comprehensive Test Ban Treaty

Countries (8 of 44) who have yet to ratify Comprehensive Test Ban Treaty (1996)

USA



CHINA

EGYPT

INDIA

IRAN

ISRAEL

NORTH KOREA

PAKISTAN

Strategic Arms Reduction Treaty (New START)

- **Signed 8 Apr 2010**
- EIF 5 Feb 2011
- Remains in force 10 years, optional 5 year extension
- Provisions of Treaty – to be met within 7 years of EIF
  - *700 Deployed Ballistic Missiles and Heavy Bombers*
  - *800 Deployed and Non-Deployed Launchers and Heavy Bombers*
  - *1550 Deployed Warheads*

President Obama and President Medvedev

New START Central Limits

- Deployed Delivery Vehicle (DV) - 700
  - ICBMs in launchers, SLBMs in launch tubes, & nuclear-equipped heavy bombers (HB)
- Non-Deployed DV – approximately 100
  - Empty ICBM and SLBM launchers, test silos, test HB & HB at repair or production facilities
- Warheads - 1550
  - On deployed ICBMs, deployed SLBMs, and nuclear capable heavy bombers
  - (Only Counts Deployed Strategic Systems)

Warhead Breakdown

1 Minuteman III= 1 Warhead due to De-MIRVing

400 Warheads

240 Trident II (D5)
1090 Warheads

42 B-52s = 42 Warheads

18 B-2s = 18 Warheads

TOTAL WARHEADS=1550

Inspection Types

- **Type One Inspections: (10 per year)**
  - ICBM Bases, Submarine Bases, Air Bases
  - Verify accuracy of declared data on number and types
    - Deployed and Non Deployed Strategic Offensive Arms
    - Number of warheads located on deployed ICBMS and Deployed SLBMS
    - Number of nuclear armaments located on Deployed Heavy Bombers

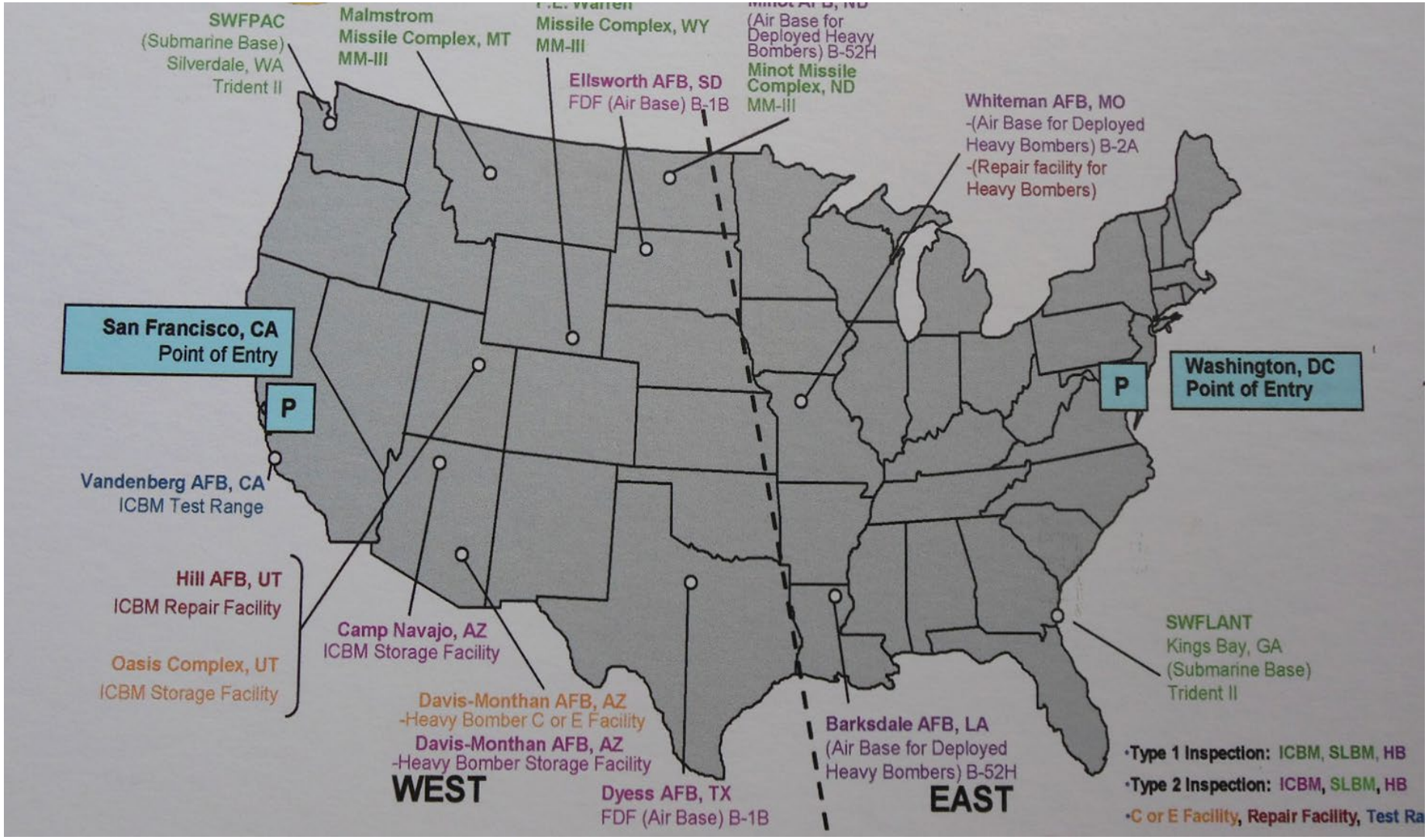
- **Type Two Inspections (8 per year)**
  - ICBM Loading Facilities, SLBM Loading Facilities,
  - Storage Facilities for ICBMs, SLBMs, and mobile launchers of ICBMs
  - Repair facilities for ICBMS, SLBMs, and Mobile Launchers of ICBMs
  - Test Ranges
  - Training Facilities
  - Formerly Declared Facilities

Inspection Notification

- "Notification, to be provided only during normal working days no less than 32 hours in advance of the estimated time of arrival of the inspection team at the point of entry, of an intention to conduct an inspection."

- Notification of the designation of the type of inspection and of the inspection site, to be provided at the point of entry no later than four hours after arrival of the inspection team at the point of entry or its return to the point of entry after the previous inspection. In the event that the inspection team intends to conduct a sequential inspection without returning to the point of entry, such notification shall be provided prior to the completion of the post-inspection procedures of the previous inspection.
    - Treaty Protocol pg. 106

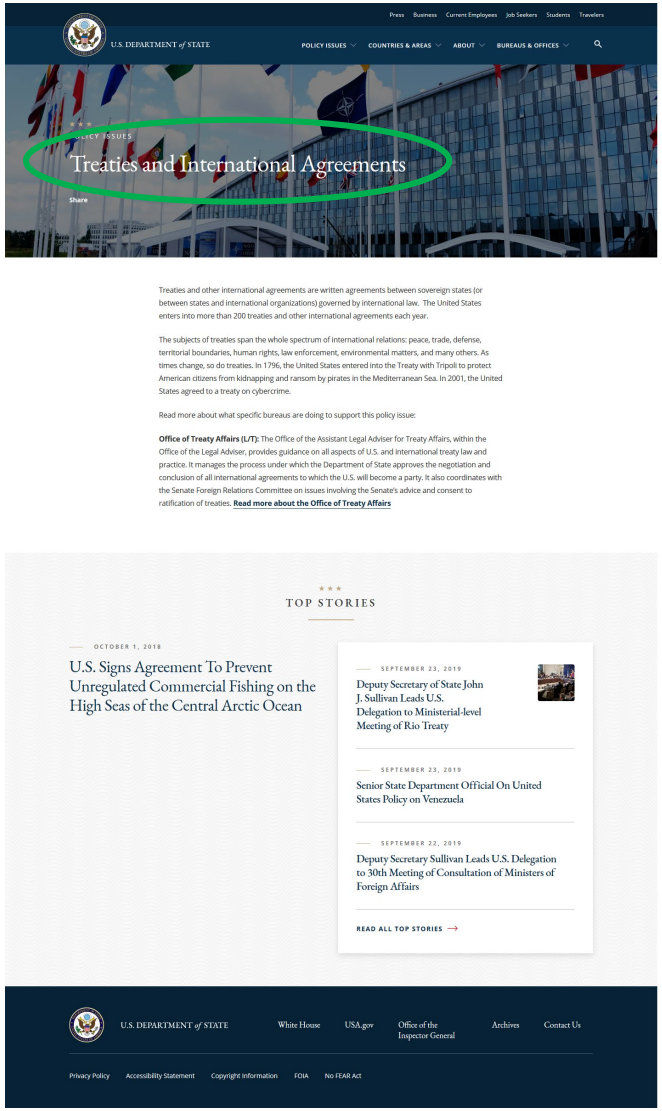
Inspection Sites: United States

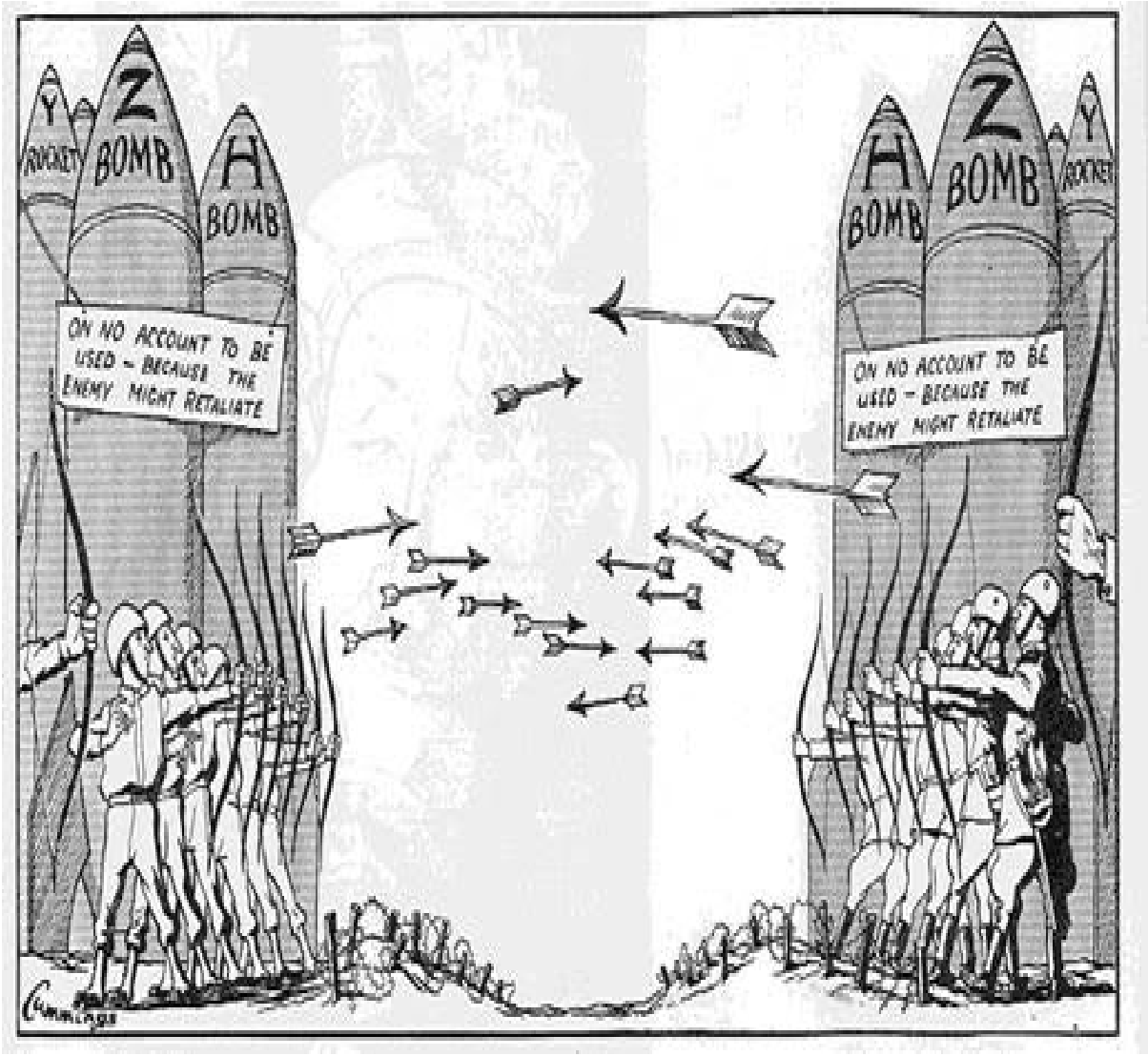


Inspection Sites: Russia

Future Treaty Considerations: Strategic vs. Nonstrategic

More Information on Treaties and International Agreements





Thank you!

Questions?