GÜNDOĞDU MODEL UNITED NATIONS 2020

DISEC: Disarmament & International Security Committee

Establishing Nuclear-Weapon Free Zones in the Middle East

The Weaponization of Outer Space

Under Secretary General**:**

Mehmet BÜYÜK

Committee Directors**:**

İpek Bali - Musa AL-Hassan Kromah - Osman Çakır

TABLE OF CONTENTS

I. Letter from Secretary-General

Highly Esteemed Participants of DISEC,

While being fraught with utter elation and contentment to be serving you as the Secretary-General of the Conference, I am thrilled to approve the academic document written by the mastermind Under Secretary General, Mehmet BÜYÜK whom never ever had disappointed me on any matter regarding the preparation process of study guides. I also would like to utter my appreciation for the designated Committee Directors, İpek Bali, Musa AL-Hassan Kromah, Osman Çakır for working with us.

International security regime. It considers all disarmament and international security matters within the scope of the Charter or relating to the powers and functions of any other organ of the United Nations; the general principles of cooperation in the maintenance of international peace and security, To conclude, on behalf of the Academic and Organization teams, I would like to stress my gratitude and thrill to be welcoming you to GMUN 2020 which will be opening a new era in the MUN community of Adana.

Faithfully,

Göktuğ Gültekin, Secretary-General of GÜNDOĞDU MODEL UNITED NATIONS 2020

II. Letter from Under Secretary General

Esteemed Participants of DISEC,

My name is Mehmet BÜYÜK and it is my utmost pleasure and honor to be assigned as the USG of DISEC.

I am thrilled to shape an enviroment for security struggles for so many eager delegates. This symposium will provide you with a unique opportuinty to experience firsthand how DISEC operates, to learn more about national perspectives on foreign interventions and effects of foreign military bases. You will experience the negotiations of international and national law as well as redefining the scope of international security.

Note that DISEC is apt for both experienced, and inexperienced MUNers. All inquiries concerning the committee can be submitted to the responsible Secretariat representatives.

Accept my best wishes for and enjoyable and productive series of deliberations.

I strongly encourage you to read and comprehend this study guide in full for understanding the topics that are to be discussed in the committee. If you have any questions, I am more than happy to help you with them. Please do not hesitate to contact me via

secretariat@evomun.com - +90 5071302685

Kindest regards,

***Mehmet BÜYÜK** , Under Secretary General responsible for DISEC*

III. Introduction to the Committee

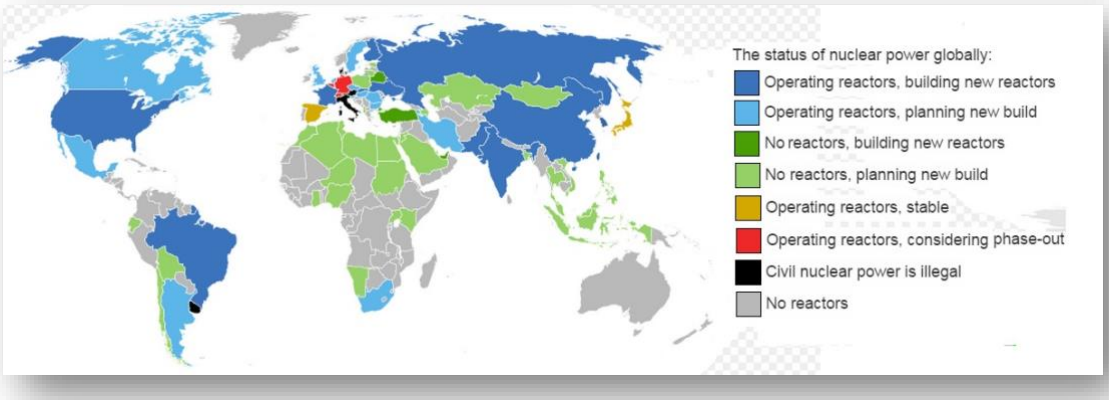
The history of humanity has been stigmatized by various conflicts and wars throughout the years with the 2 World Wars being among its deadliest conflicts. Since the Cold War era came to an end, the type of the conflicts started to shift from conflicts among different states to conflicts within a single state. In other words, as the number of interstate conflicts lessened, intrastate conflicts have increased. Power struggles within newly formed states, conflicts for independence and persecutions of minorities have been common events during the last decades. As all sort of conflicts need some sort of force to come to an end, military interventions have started to become a question as an alternative to diplomatic talks. However, the intentions of the third-party states (interfering states) have started to be questioned by observer nations. More specifically, powerful nations such as the United States or Russia have been accused of intervening smaller countries to increase their control over specific nations and regions and to serve their own interests than to preserve international human rights and values. Whether the accusations were correct or the intervening states did seek sustainability within that country in order to promote peace and prevent further deaths remains an unclarified question. DISEC having the preservation of peace and security as its main objective has been one of the most involved international organ in the issue of interventions. As such and taking previous events into consideration, one can easily divide foreign military interventions into two sub-categories; namely UN-approved or evoked interventions and military interventions without the approval of the DISEC.

IV.Introduction to Agenda Item A

(Establishing Nuclear-Weapon Free Zones in the Middle East)

A. Current Outlook

At the 1995 Review Conference (RevCon), the states parties to the Nuclear Non-Proliferation Treaty (NPT) decided to extend the time frame of the treaty indefinitely. This decision was adopted without a vote and made possible in part because Arab states[1] were given assurances, through a resolution sponsored by the three depositary states of the NPT (Russia, the UK and the US), that the member states would pursue the goal of establishing a zone free of weapons of mass destruction (WMD) in the Middle East.[2] Over 20 years later that goal remains a distant possibility, despite the mandate agreed at the 2010 NPT RevCon to hold a conference with regional states to move forward on the WMD-free zone (WMDFZ). Far from facilitating discussion, however, the 2010 mandate and 1995 resolution may have inadvertently become the main obstacles to achieving the goal. Both of these avenues rely on the NPT and do not reflect the national interests of all regional actors, which need to believe in the process. Even those who have set the goal of creating a WMDFZ as a national priority do not necessarily view it as a policy aimed at promoting international peace and security, and strengthening the non-proliferation norm. Rather, they see it primarily as a vehicle for furthering other policies (e.g. narrowing the gap in military capabilities among Middle Eastern countries), which are targeted at some of their partners within the WMDFZ process. The countries of the region and the depositary states of the NPT have blamed one another for the failure to achieve any notable progress, citing lack of political will, inflexibility of approach and reneging on promises made. These problems are compounded by the connection of the WMDFZ proposal to the NPT, the erosion of links between the proposal and the Middle East peace process and, indeed, the lack of progress itself over many years.[3] Despite the validity of these complaints, they are symptoms of a larger problem – namely a lack of genuine interest from participants in the outcome of the process. In recent years, the proposal for a WMDFZ has been discussed primarily within the framework of the NPT.



[1] This paper will not detail the individual country positions of every Arab state, but rather the common position of Arab states on the WMDFZ, which has been consistent throughout the process and promoted chiefly by Egypt.

[2] 'History of the NPT 1975–1995, Reaching Critical Will', www.reachingcriticalwill.org/disarmament-fora/npt/history-of-the-npt-1975-1995.

[3] The Middle East peace process began with the Madrid Conference of 1991 and is a set of bilateral and multilateral negotiations between Israel and its Arab neighbours, addressing several concerns including regional security. The 1995 Resolution on the Middle East establishes the link between the Middle East peace process and the establishment of a WMDFZ

This has resulted in a process that does not factor in the regional realities, such as the lack of progress in the Arab–Israeli peace process, changes in the security priorities of several Middle East countries, the concerns and interests of all the countries involved, and particularly the fact that Israel remains outside the treaty and is concerned about possible attempts to tie it into the NPT. Crucially, its non-member status means it is not bound by NPT decisions. The fact that not all countries in the Middle East see the utility of and support the normative benefits of a WMDFZ has highlighted the need for it to be addressed within a wider context. Continuing to think that this process is primarily about establishing such a zone without addressing the primary interests of those countries involved has led to a process that is not transparent and has limited the prospects for success. This is evident from the discrepancy between the policies and postures of the two most prominent parties in the negotiations, Egypt (representing the Arab states) and Israel. Egypt wants to close the gap in WMD capabilities between the states of the region and specifically highlights Israel's nuclear programme. Israel, in contrast, sees the negotiations as an opportunity to engage directly with the Arab states and pave the way for the normalization of ties between them.

B. History of the Zone Concept

The concept of the nuclear-weapon-free zone (NWFZ), as it has evolved in political discourse since the mid-1950s, now covers a spectrum of arrangements. Geographically, it ranges from whole continents like Latin America to a corridor in Central Europe, and functionally, it serves the purpose of preventing the spread of nuclear weapons, as well as that of avoiding nuclear war. The expansion of the NWFZ concept to include all weapons of mass destruction has been proposed. The zone issues should, therefore, be studied both in historical and conceptual terms.[1] The first proposal on regional limitation of nuclear weapons, introduced by the Soviet Union in the United Nations, was tabled in 1956[2] . It referred to Central Europe and was proposed by one superpower and directed at the other. One year later Poland proposed the so called Rapacki-plan on the permanent absence of nuclear weapons from the entire territory of several states in Central Europe[3] . The latter proposal was thus made by one of the states within the prospective zone region.

1 Texts of treaties and other important international documents referred to in this report can in most cases be found in:
* Status of Multilateral Arms Regulation and Disarmament Agreements, Fourth Edition 1992, Volumes 1 and 2, (UN Sales No. E.93.IX.11) which is current up to 31 December 1992;
* J. Goldblat, Arms Control. A Guide to Negotiations and Agreements. PRIO. Sage Publications. London. 1994, current up to October 1993; and/or

* T. N. Dupuy, G. M. Hammerman, A Documentary History of Arms Control and Disarmament, R. R. Bowker Company, New York, 1973, including the texts of many old treaties. The status of arms control treaties, up to 1 January 1995, are included in:

* SIPRI Yearbook 1995, SIPRI, Oxford University Press, 1995; and

* The United Nations DISARMAMENT YEARBOOK, Vol. 19:1994 (UN Sales No. E.95.IX.1). These two yearbooks are published annually.

2 UN Document DC/SC.1/41.

3 UN Document A/PV. 697, also called the Rapacki-plan after the Minister for Foreign Affairs of Poland at the time. Mr Adam Rapacki (1906-1970) was Poland's Foreign Minister from 1956-1968.

C. Nonproliferation status of countries in the proposed zone

For the purposes of this paper, we adopt the suggestion in the 1991 study commissioned by the U.N. Secretary General that a Middle East WMD-free zone should encompass "all States directly connected to current conflicts in the region, i.e. all States members of the League of Arab States (LAS), the Islamic Republic of Iran and Israel." [13] That definition includes all of the countries identified in Figure 1. Israel is the only prospective member of the Middle East WMD-free zone that has nuclear weapons. A necessary condition for the zone to become a final reality therefore will be for Israel to give up its nuclear weapons and join the NPT as a non-weapon state.[14] Aside from Israel, all the countries that are potential members of a Middle East WMD-free zone are members of the NPT (Table 1).

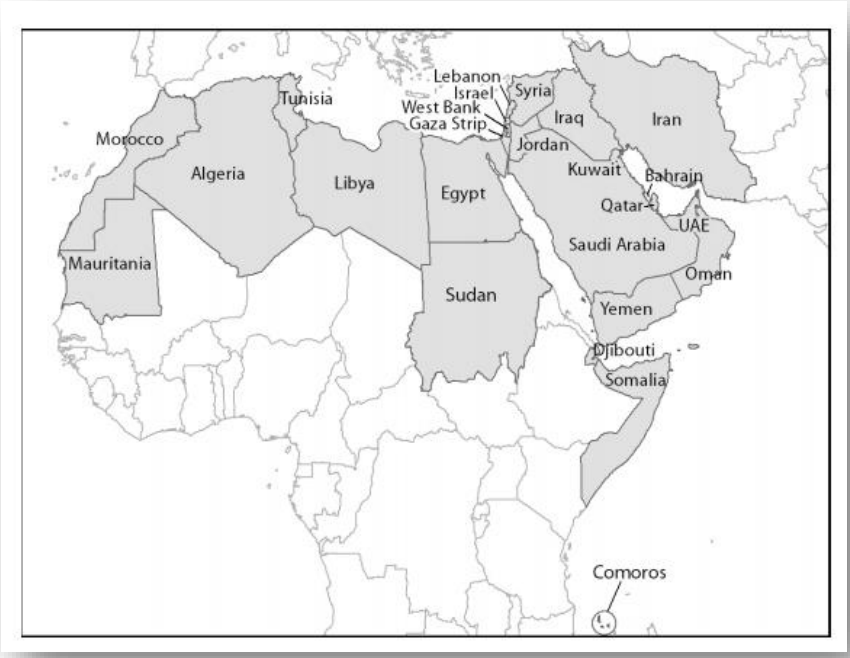


Figure 1. The labeled countries are members of the Arab League except for Iran and Israel and could be in a Middle East Nuclear Weapons Free Zone or a broader WMD-free zone. Credit: Tsering Wangyal Shawa, Princeton University.

All the non-weapon states in the hypothetical Middle East WMD-free zone being discussed here have signed a Comprehensive Safeguards Agreement with the International Atomic Energy Agency, except for Somalia. Djibouti has signed a safeguards agreement but, as of June 2013, it had not entered into force. These agreements require a state to declare its nuclear material and activities and enable International Atomic Energy Agency (IAEA) inspections to verify these reports. In light of Iraq's pre-1991 clandestine efforts to acquire uranium enrichment technologies, the IAEA introduced an Additional Protocol (AP) to the

Comprehensive Safeguards Agreements as a means to increase transparency of nuclear programs. As of mid-2013, only eight members of the proposed zone had signed and ratified the Additional Protocol (United Arab Emirates, Bahrain, Jordan, Kuwait, Iraq, Libya, and Mauritania). Iran signed but did not ratify the AP in 2003. It voluntarily complied with the AP until the IAEA Board of Governors transferred to the UN Security Council the issue of Iran's cooperation in resolving questions about its past nuclear activities. The 1996 CTBT, like the NPT, is a major multilateral nuclear arms control and nonproliferation agreement that non-weapon states as well as weapon states are encouraged to join. Saudi Arabia, Syria and Somalia have not signed the CTBT, while six states in the potential Middle East WMD-free zone have signed but not yet ratified the treaty (Table 1). Since Israel, Iran and Egypt have signed, the treaty and thus shown their intent in principle to abide by its provisions, they could individually ratify or coordinate joint ratification of the CTBT as a confidence building measure.[15] All the African members of the Arab League except Somalia have signed the African Nuclear Weapons Free Zone Treaty (the Treaty of Pelindaba), which came into force in 2012 but, as of late 2013, only three: Algeria, Libya and Mauritania, had ratified it.[16] In any case, membership in the Pelindaba Treaty, adds no constraints or verification requirements beyond those associated with non-weapon-state membership in the NPT. The WMD-free zone under consideration is intended to cover all weapons of mass destruction, not just nuclear weapons. This would require all states in the region to ratify the CWC and BWC. Not all have done so (Table 1). A Middle East WMD-free zone treaty would likely follow the example of current NWFZ treaties and constrain nuclear-weapon activities of outside nuclear-armed states within the region. The African NWFZ, for example, bans the stationing by other countries of "nuclear explosive devices" on the territories of the member states. The Latin American NWFZ extends a considerable distance into the contiguous seas. Most likely, members of a Middle East WMD-free zone would want to ban over-flights of their territories by nuclear-armed aircraft and also the presence of nuclear-armed ships in at least the Persian Gulf and Red Sea.

	NPT	BWC	CWC	CTBT
Algeria	12 Jan. 1995	22 July 2001	14 Aug. 1995	11 July 2003
Bahrain	3 Nov. 1988	28 Oct. 1988	28 April 1997	12 April 2004
Comoros	4 Oct. 1995	17 Sept. 2006	–	(S) 12 Dec. 1996
Djibouti	16 Oct. 1996	–	25 Jan. 2006	15 July 2005
Egypt	26 Feb. 1981	(S)10 April 1972	–	(S) 14 Oct. 1996
Iran	2 Feb. 1970	22 Aug. 1973	3 Nov. 1997	(S) 24 Sept. 1996
Iraq	29 Oct. 1969	19 June 1991	13 Jan. 2009	(S) 19 Aug. 2008
Israel	–	–	(S) 13 Jan. 1993	(S) 25 Sept. 1996
Jordan	11 Feb. 1970	30 May 1975	29 Oct. 1997	25 Aug. 1998
Kuwait	17 Nov. 1989	18 July 1972	28 May 1997	6 May 2003
Lebanon	15 July 1970	26 March 1975	20 Nov. 2008	21 Nov. 2008
Libya	26 May 1975	19 January 1982	6 Jan. 2004	6 Jan. 2004
Mauritania	26 Oct. 1993	–	9 Feb. 1998	30 April 2003
Morocco	27 Nov. 1970	21 March 2002	28 Dec. 1995	17 April 2000
Oman	23 Jan. 1997	31 March 1992	8 Feb. 1995	13 June 2003
Qatar	3 Apr. 1989	17 April 1975	3 Sept. 1997	3 March 1997
Saudi Arabia	3 Oct. 1988	24 May 1972	9 Aug. 1996	–
Somalia	5 Mar. 1970	(S) 3 July 1972	28 June 2013	–
Sudan	31 Oct. 1973	17 Oct. 2003	24 May 1999	10 June 2004
Syria	24 Sept. 1969	(S)14 April 1972	14 Sep. 2013	–
Tunisia	26 Feb. 1970	18 May 1973	15 April 1997	23 Sept. 2004
UAE	26 Sept. 1995	19 June 2008	28 Nov. 2000	18 Sept. 2000
Yemen	1 June 1979	1 June 1979	2 Oct. 2000	(S) 30 Sept. 1996

Table 1. Dates of ratification/accession [or signature (S) for states not yet parties] to the 1968 nuclear Non-Proliferation Treaty (NPT), 1972 Biological Weapons Convention (BWC), 1993 Chemical Weapons Convention (CWC), and 1996 Comprehensive Test Ban Treaty (CTBT) for possible members of a Middle East WMD-free zone.[17] In September 2013, Syria ratified the CWC. [18]

D. Nuclear freeze, transparency and phased reductions by Israel

To join a Middle East WMD-free zone treaty, Israel will have to give up its nuclear weapons. Israel is believed to have acquired nuclear weapons in the late 1960s.[19] Based on its estimated plutonium production, numbers of nuclear-capable delivery systems and U.S. intelligence statements, independent analysts have inferred that Israel today may have perhaps 80 warheads and that the arsenal has remained roughly constant for the past decade.[20]

Israel is believed to be the only state in the region that has produced separated plutonium, and possibly highly enriched uranium (HEU), the key ingredients in nuclear weapons. It may now have enough plutonium, including that already in weapons, for perhaps 200 nuclear warheads. By the time a Middle East WMD-free zone came into force, Israel would need to have eliminated all of its nuclear weapons and placed all of its fissile materials under IAEA safeguards – as South Africa did when it gave up its nuclear weapons in the early 1990s. This will take time but Israel could indicate the seriousness of its willingness to do so by:

• Ending any on-going production of separated plutonium and highly enriched uranium and shutting down and/or putting under IAEA safeguards the associated production facilities; and

• Declaring its fissile material stocks and beginning to place portions under IAEA safeguards pending disposal.

These transitional steps would serve to make a Middle East WMD-free zone feasible and are discussed further below. End plutonium and HEU production It is widely believed that Israel's nuclear arsenal is plutonium-based and that the plutonium was produced by irradiating natural uranium fuel in a heavy-water-moderated reactor supplied by France at the Negev Nuclear Research Center near Dimona (Figure 2). It is believed that the plutonium was chemically separated from the irradiated uranium in an underground reprocessing plant adjoining the reactor. [21] By shutting down the Dimona reactor and ending reprocessing, Israel would cap the amount of plutonium that it could use to make nuclear weapons. Most likely, these steps could be verified initially with fair confidence without access inside the site. Airborne infrared sensors should be able to verify the reactor shutdown by detecting the reduction of the temperatures of the outside of the reactor containment building and of the reactor cooling towers. The end of reprocessing in the

Figure 2. The Negev Nuclear Research Center near Dimona, Israel. The reactor under the dome at the lower right is believed to have produced plutonium for Israel's nuclear weapons, with the plutonium being separated in an adjoining underground reprocessing plant. The complex may also host a small gas-centrifuge uranium-enrichment plant. Source: Google Earth.

underground facility should be verifiable by off-site monitoring for the gaseous fission product, krypton-85, which is released when irradiated nuclear fuel is cut open in the first stage of reprocessing. Because the gas is chemically non-reactive, it is difficult to capture and most reprocessing plants have not bothered to try.[22] Remote detection of the shutdown of Israel's nuclear reactor and reprocessing plant could be the first step toward regional monitoring by prospective parties to a Middle East WMD-free zone. This could also include agreements to allow mutual over-flights of unarmed instrumented aircraft or drones to detect indications of clandestine nuclear facilities. The 1992 Open Skies Treaty between NATO and the Warsaw Pact provides a precedent for such over-flights. The Treaty allows 42 over-flights a year each over the United States and Russia/Belarus and a lesser number over other smaller countries (up to 12 per year). The sensors allowed are optical, infrared and synthetic aperture radar, but other sensors for collecting, processing and analyzing air samples could be added by consensus.[23] There are grounds for optimism that airborne sensors could enable detection of nuclear undeclared facilities in the Middle East. The characteristic signatures of nuclear facilities include heat from a plutonium production reactor (Figure 3).It might be possible also to detect the production and use of uranium hexafluoride (UF6), the gas used in uranium enrichment centrifuges, through its degradation product UO2F2 –produced by reactions with moisture in the air of UF6 leaking from equipment in a plant that converts uranium oxide into UF6 gas for enrichment and then back into oxide or metal form. [24]

Downwind detection at a distance of krypton-85 from a reprocessing plant has been demonstrated (Figure 4).

Figure 3. The sensitivity of thermal imaging is demonstrated by the hot spots seen on the outside of rail cars carrying containers of hot glassified nuclear waste being transported from France to Germany. Source: Greenpeace.

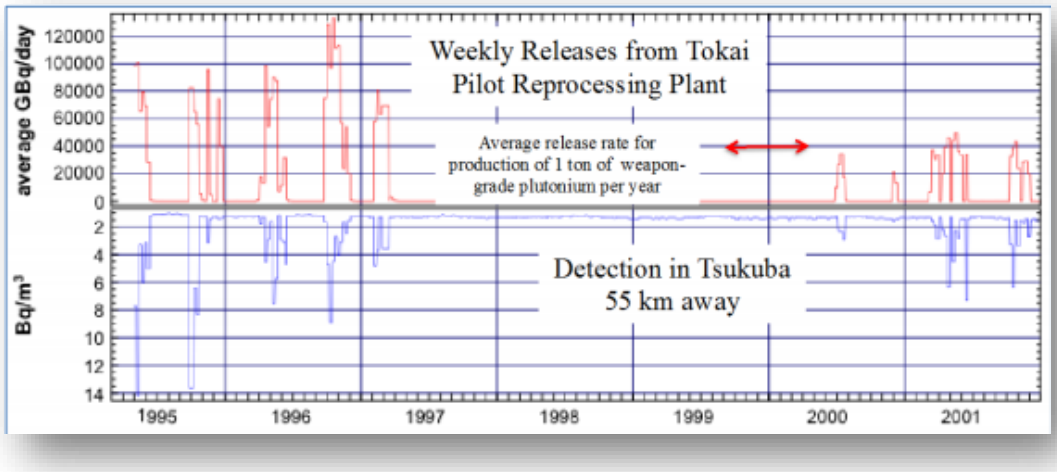


Figure 4. Remote detection of krypton-85 from Japan's Tokai reprocessing plant.[25]

Israel could decommission and dismantle its Dimona reactor after shutdown. Similarly, the adjacent reprocessing plant could be decommissioned, after the removal of high-level radioactive wastes and unreprocessed spent fuel, by filling it with concrete. The spent fuel could be placed in safeguarded storage nearby until a deep geological repository becomes available. Alternatively, Israel could place the Dimona facilities under IAEA safeguards to

assure that they are used only for peaceful purposes. There is a precedent for facility-specific IAEA safeguards in Israel. The research reactor at the Soreq Nuclear Research Center and its HEU fuel are under safeguards by agreement with the United States, which provided the reactor to Israel in the late 1950s and the fuel. The Dimona reactor is believed to have produced not only plutonium but also tritium for some of Israel's nuclear weapons. Unlike plutonium-239, which has a half-life of 24,000 years, tritium has a half-life of about 12 years and therefore has to be replenished unless the weapons requiring it are gradually retired or are allowed to decline in yield to the order of a kiloton of chemical explosives equivalent. [26] Israel may have built up a stockpile of tritium that would allow it to maintain its weapons for a decade or more before it had to face these possibilities or could begin producing tritium from an alternative non-reactor source.[27] Israel reportedly has conducted uranium-enrichment activities at the Negev Nuclear Research Center and possibly elsewhere as part of its nuclear-weapon program.[28] Israel should declare the sites of these activities and allow the IAEA to verify that they have ended.

Recommended reading:

https://fas.org/programs/ssp/nukes/ArmsControl_NEW/nonproliferation/NFZ/NP-NFZ-ME.html

Declare plutonium and HEU stocks and begin to put them under safeguards

A second step toward enabling a Middle East WMD-free zone and nuclear disarmament would be for Israel to declare the size of its stocks of separated plutonium and HEU. The estimate made for the International Panel on Fissile Materials (IPFM) is that Israel has produced 850 ±125 kg of plutonium (Figure 5).[29] Assuming 4 to 5 kg of plutonium per nuclear warhead, this would be enough for 145 to 240 warheads. Israel is believed also to have clandestinely obtained up to 300 kg of weapon-grade uranium from a U.S. naval fuel fabrication facility during the 1960s. [30] Eventually, Israel's historical production of plutonium could be checked using techniques of "nuclear archaeology." This would include measurements of isotopic changes of certain trace elements in the permanent metal structures supporting the core of the Dimona reactor.[31] These measurements would reveal the cumulative flow or "fluence" of neutrons through the core over the lifetime of the

reactor, which would provide the basis for an estimate of the total production of plutonium in the reactor.

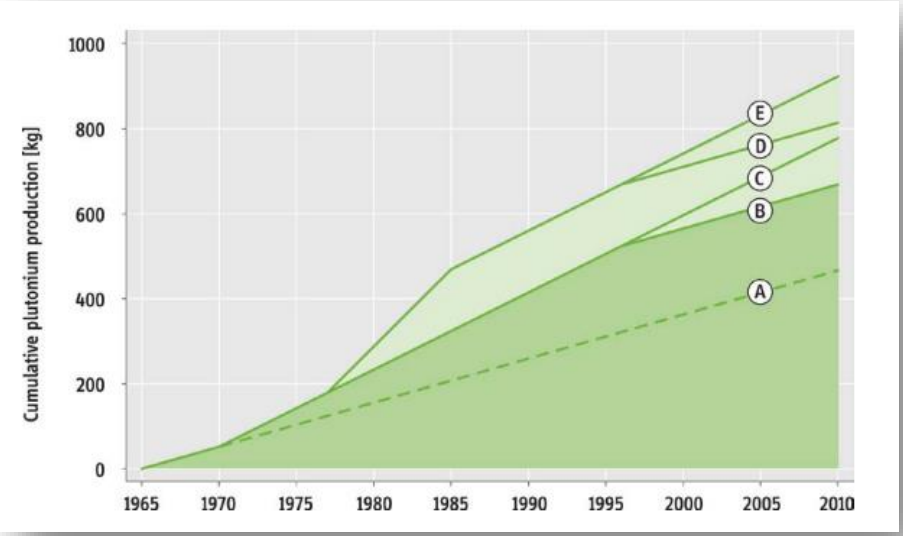


Figure 5. Estimated cumulative plutonium production in the Dimona reactor for different assumptions about its power history over almost 50 years of operation.[32]

Israel could verifiably reduce in a phased manner the quantities of plutonium and HEU that it has available for weapons by placing increasing portions of its stockpiles under international safeguards for monitored disposal. The dismantlement of Israel's last nuclear weapons and placing of the recovered fissile material under international safeguards – in parallel with the completion of other actions by other parties to the WMD-free zone that would give Israel confidence that it no longer faced existential security threats –- would be the final step in its disarmament. By committing publicly to this goal, Israel could contribute to a regional confidence-building process and help set the basis for a verifiable Middle East WMD-free zone.

ENDNOTES OF SECTION *C* AND *D*

[13] Effective and Verifiable Measures Which Would Facilitate the Establishment of a Nuclear-weapon-free Zone in the Middle East, (Report of the Secretary General, United Nations, 1991) paragraphs 65, 66.

[14] Israel could not join the NPT as a weapon state because of Article IX.3, which limits nuclear weaponstate membership to countries that tested nuclear explosives before 1967.

[15] We are grateful to Ambassador Paul Meyer of Canada for this suggestion.

[16] "African Nuclear Weapon Free Zone Treaty (Treaty of Pelindaba)," Disarmament Treaties Database, United Nations Office of Disarmament Affairs, disarmament.un.org/treaties/t/pelindaba. 31

[17] Disarmament Treaties Database, United Nations Office of Disarmament Affairs, disarmament.un.org/treaties.

[18] United Nations Secretary-General announcement of Syria's ratification of Chemical Weapons Convention, 14 September 2013, http://treaties.un.org/doc/Publication/CN/2013/CN.592.2013-Eng.pdf.

[19] Avner Cohen, "Crossing the threshold: the untold nuclear dimension of the 1967 Arab-Israeli War and its contemporary lessons," Arms Control Today, June 2007.

[20] Robert Norris and Hans Kristensen, "Global nuclear weapons inventories, 1945–2010," Bulletin of the Atomic Scientists, July/August 2010. See also the excerpt of the Defense Intelligence Agency's secret threat assessment, A Primer on the Future Threat: The Decades Ahead: 1999-2020 reprinted in Rowan Scarborough, Rumsfeld's War (Regnery, 2004), p. 197, where estimates are given for Israel's warhead stockpile for 1999 (60-80) and projected to 2020 (65-86).

[21] "Israel" in Global Fissile Material Report 2010: Balancing the Books-Production and Stocks (International Panel on Fissile Materials, 2010).

[22] Krypton-85 capture is not impossible. Campaigns were carried out at a naval fuel reprocessing plant in the United States and a pilot plant in Germany. The systems used were still in development, however, Patricia Paviet-Hartmann, W. Kerlin, and S. Bakhtiar, Treatment of Gaseous Effluents Issued from Recycling – A Review of the Current Practices and Prospective Improvements (Idaho National Laboratory, INL/CON-10-19961, 2010); and E. J. Hutter, R. Von Ammon, W. Bumiller, and G. Neffe, "Final results and consequences of the development of a cryogenic krypton separation system," Proceedings of the 19th DOE/NRC Nuclear Air Cleaning Conference, Seattle, WA, 18-21 August 1986.

[23] "Treaty on Open Skies," U.S. Department of State, www.state.gov/t/avc/trty/102337.htm.

[24] R. Scott Kemp, "Initial analysis of the detectability of UO2F2 aerosols produced by UF6 released from uranium conversion plants," Science & Global Security, 16, 2008, p. 116; and "Source terms for routine UF6 emissions," Science & Global Security, 18, 2010, p. 119.

[25] R. Scott Kemp, "A performance estimate for the detection of undeclared nuclear-fuel reprocessing by atmospheric 85Kr," Journal of Environmental Radioactivity, 99, 2008, p. 1341.

[26] A mixture of deuterium (D) and tritium can be used to "boost" the yield of a small fission explosive with a burst of neutrons (n) from the reaction D+T –> He4 + n, see e.g., Frank von Hippel, Harold Feiveson, and Christopher Paine, "A low-threshold nuclear test ban," International Security, Vol. 12, No. 2, Fall 1987, p. 135. [27] One alternative source could be a particle-accelerator-driven neutron source that could create tritium (T) through the reaction: n + lithium-6 –> T + helium-4. Only a relatively modest neutron source would be required since less than 5 percent of the neutrons produced by the Dimona reactor are available for tritium production. The Dimona reactor is fueled with natural uranium. Uranium-238 constitutes 99.3 percent of natural uranium and most of the neutrons in a heavy-water natural-uranium-fueled reactor that are not required to maintain the chain reaction are absorbed in uranium-238 to produce plutonium-239. See the discussion in Global Fissile Material Report 2010 (International Panel on Fissile Materials, 2010), p. 114. A commercially available 150-MeV, 2 mA isochronous cyclotron could produce about one neutron per proton on a spallation target or about 1.5 percent the number of excess neutrons produced by the Dimona reactor fueled with natural uranium and operating at 70 MW-thermal, R. Scott Kemp, "Nuclear proliferation with particle accelerators," Science & Global Security, 13, 2005, p. 183.

[28] "Israel" in Global Fissile Material Report 2010, op. cit.

[29] Ibid.

[30] Victor Gilinsky and Roger Mattson, "Revisiting the NUMEC affair," Bulletin of the Atomic Scientists, March/April 2010, p. 61.

[31] Alex Gasner and Alexander Glaser, "Nuclear archaeology for heavy-water-moderated plutonium production reactors," Science & Global Security, 19, 2011, p. 223. 32

[32] For details of the scenarios, see "Israel" in Global Fissile Material Report 2010: Balancing the

BooksProduction and Stocks (International Panel on Fissile Materials, 2010).

The Geographic Delimitations

The 1975 UN study on nuclear-weapon-free zones presupposed that a zone in the Middle East would include 15 States extending from Libya to Iran including the Gulf States and Israel. The UN study was strictly abiding by a legal UN practice of what is considered to be the Middle East. Therefore, it did not include the other Northern African States: Mauritania, Morocco, Algeria and Tunisia, nor did it include the Sudan or Somalia (Djibouti and the Comoros Islands were not yet members of the Arab League). In this respect it should be recalled that many Middle Eastern Countries questioned the Wisdom of ascertaining the views of only 15 countries. It should be recalled that the Arab League in 1974 was of the opinion that a nuclear-weapon-free zone in the Middle East should include all the Arab States plus Iran and Israel. The 1990 UN study took a different course than that of the 1975 study. It benefited also from a study made by the IAEA which included a similar definition to that of the 1975 study15. The new study spoke of core countries and peripheral countries. Core countries meant the Middle Eastern Countries involved in the Arab Israeli conflict plus Iran. The peripheral countries are those existing in the area that can be involved in the establishment of the zone but not necessarily from the beginning. The 1990 UN study also did not miss to mention the seas areas such as the Red Sea and the Gulf as well as the inclusion of the international waterways such as the Suez Canal. The countries of the Middle East will probably learn from the experience of the Parties to the Treaty of Tlatelolco. For example, the latter seems to permit the transit of nuclear weapons through the Panama Canal and this had triggered serious reservations. In the Middle East serious thought should be given to such a delicate and intricate issue. In this regard, Article 2 of the African Nuclear-Weapon-Free Zone states that nothing in the Treaty establishing the zone will affect in any way the rights of States with regard to the freedom of the seas. Inter-Arab negotiations tend to include all Arab States plus Iran and Israel within the zone. It is not envisaged to establish such a zone without Israel becoming party to it. Although a number of issues have been agreed upon and will not be reopened for negotiations between the Arab countries, it is not yet clear whether Israel and Iran would have the right to reopen certain issues on which consensus has emerged. A number of Arab States would favor including Turkey and Cyprus in the definition of the Middle east. As to peripheral or neighboring States, some mention Turkey, Pakistan and the European Mediterranean States. It is intended to have an annex to

the Treaty establishing the zone dealing with the obligations of the neighboring States. Maps of the States constituting the zone and the neighboring States will also be attached to the Treaty

Modalities With Special Emphasis on Verification

A nuclear-weapon-free zone in the Middle East presupposes that the parties to it may have already adhered to the NPT . All the Arab States are now Parties to it. Iran is also a Party . Israel would be expected to adhere to the NPT if it were to join a nuclear-weapon-free zone in the Middle East. However, if Israel were to opt to join a nuclear-weapon-free zone in the Middle East before adhering to the NPT, this would be a welcomed step. In this regard it should be noted that Brazil is a Party to the Treaty of Tlatelolco but not yet to the NPT. Having said this, the Arab States expect Israel to adhere to the NPT as soon as possible. The main obligations of the parties to such a zone would be similar to those undertaken in the NPT plus an obligation to guarantee the complete absence of nuclear weapons on their territories in the established zone and to refrain from nuclear testing. Moreover, the zone should also benefit from negative guarantees similar to those secured by the Parties to the Treaty of Tlatelolco and to other similar Treaties, i.e. the none use or the threat of use of nuclear weapons against the States of the zone. It is also envisaged to have a protocol attached to the Treaty establishing the zone to which the five permanent members of the Security Council would subscribe. In working out the different provisions of the zone, negotiators may wish to benefit from the experience gained in negotiating the Treaty of Tlatelolco, the Treaty of Roratonga the Treaty of Bangkok, and The Treaty of Pelindaba. For example, the inter-Arab negotiations tend to support an indefinite duration of the Treaty. A minority view preferred 15 years renewable. On waste disposal, the inter-Arab negotiations tend to prohibit countries outside the zone from using Arab territories for disposing of their waste whether it is nuclear, chemical or biological. One of the most difficult and delicate issues to deal with is the verification issue. As in the case of the Treaty of Tlatelolco, IAEA safeguards should be applicable in the case of a nuclearweapon- free zone in the Middle East. The IAEA is already involved in studying the application of safeguards in the Middle East16. In its report to the General Conference of the IAEA in September 1993, the IAEA Secretariat reported the responses and comments of some states of the region17. The common denominator in the responses so far received by the Agency is the central role

expected to be played by the IAEA. In one of the responses, the establishment of a regional authority and the creation of a regional inspectorate to work jointly with the IAEA following the conclusion of a peaceful settlement in the Middle East were suggested. This suggestion seems to follow the example of OPANAL established by the Treaty of Tlatelolco to oversee the proper implementation of Treaty provisions, especially verification. From the many discussions with the countries of the region, the Director General of the IAEA concluded that existing comprehensive safeguards, alone, would not suffice as means of verification. Most likely some combination of international and regional or bilateral announcements would have to be worked out. Dr Hans Blix reported to the UN General Assembly the idea of incorporating additional features to strengthen its safeguards system by introducing regional or mutual inspection by the parties. This latter verification has been adopted by Argentina and Brazil (ABACC), an example that could be followed in other parts of the world to build up confidence and enhance assurances. Moreover, Middle East zone can also benefit from the Uratom experience, now that a number of states in the region have invested in nuclear research have been contemplating an investment in nuclear power generation.

In this regard, it is worth noting that in the period preceding the Extension and Review Conference of the NPT in New York, April-May 1995, and in the framework of attempts to induce Israel to adhere to the NPT, Israel seemed to accept mutual inspection of Egyptian and Israeli nuclear facilities which did not include the Dimona facility. This was not acceptable to Egypt as long as Dimona remained outside any control. In a verification system of a Middle East nuclear-weapon-free zone, the recently concluded Chemical Weapons Convention of 1993 can be of some use, as it provides some interesting features that could be easily copied, such as prompt access by inspectors and challenge inspections. Another concept which could be of great advantage is the use of soil, air and water sampling to enhance confidence in the absence of undeclared nuclear activities . The IAEA has also organized a workshop in Vienna in May 1993 on the modalities and the methods of application of safeguards in a future nuclear-weapon-free zone in the Middle East18 .

The objective was to assist the Middle Eastern experts in learning the different modes of verifications. A second workshop is being contemplated in 1997. Israel's adherence to such a zone or to the NPT would be a special case to deal with . An inventory of nuclear material accumulated over the years under no international verifications should be carefully done to guarantee that all nuclear material is accounted for.

The adherence of South Africa to the NPT and the signing of the safeguards agreement with the Agency, which were followed by the revelations about South Africa's nuclear-weapon capabilities dismantled before its adherence to the NPT, should be a lesson in the case of future adherence of Israel to the NPT or a nuclear-weapon-free zone or a zone free of weapons of mass destruction in the Middle East. There is a trend favoring discounting past inventory in order to encourage hesitant countries to join the non-proliferation regime. In the case of Israel, such an approach would be self defeating. In the Middle East we shall have to be cautious. Suffice to mention the Iraqi experience and the failure of the IAEA safeguards system to uncover clandestine activities. With regard to chemical weapons, the modalities and verification system should be greatly guided by the Paris Convention of 1993 . As we have mentioned before, the Convention has introduced new verification techniques including prompt access by inspectors and challenge inspections as well as environmental samplings.

As to Biological weapons, also the modalities of the Biological Weapons Convention of 1972 would be of great use in working out the modalities of a zone free of weapons of mass destruction . However it must be said that the verification system of the Convention has been extremely primitive. The Ad hoc Conference of the Parties convened in 1994 and the Review Conference of the Parties convened in 1996 do not seem to have been able to strengthen verification. Many Parties to the Convention have in recent years agreed to implement voluntary confidencebuilding and transparency-providing measures, exchanging regular reports on their peaceful activities in the field. The inter-Arab negotiations during their fifth meeting in December 1996, dwelled upon the issue of verification. The questions raised in this regard were as follows:

- Is there a need for an independent mechanism for verification or shall the zone rely on existing intentional systems of verification?
- How to reconcile between a regional mechanism of verification and the obligations undertaken by States of the region under international systems of verification?
- Is it possible to entrust the Arab Organisation for Atomic Energy with the verification role, which would require developing its responsibilities and its financial capabilities?, and would it be under the umbrella of the League of Arab States or would it become a Middle Eastern setup.
- The question of benefiting from certain aspects of the verification systems of other nuclearweapon-free zones has been raised

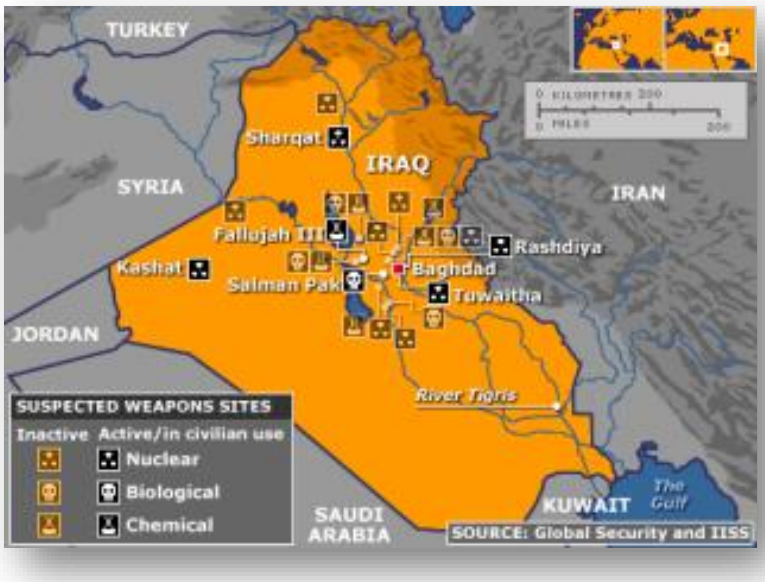
Future Perspectives

The objective of establishing a nuclear-weapon-free zone and a zone free of weapons of mass destruction in the Middle East is not and has never been in the realm of futuristic dreams, however bleak and desperate the situation in the Middle East may sometimes seem to be. The breakthroughs in the peace process, however meager they may sometimes appear to be, engenders hope that one day the negotiators will dwell upon in depth all aspects pertaining to the establishment of the two zones . The Multilateral Working Group on Arms Control and Regional Security (ACRS) of the Madrid process offered a good opportunity to proceed with the examination of the establishment of the two zones. It might be difficult to expect much without a political settlement of the Arab-Israeli conflict in the bilateral tracks. However, time should not be wasted. An early examination and discussion of the various and intricate aspects in the establishment of the two zones would pave the way for more profound work later on. That is why the Arab States are not wasting any time in dealing with the issues hoping that Israel and Iran would join them later. A second informal track to ACRS has been sought of but does not seem to receive the same attention compared to the real track. The reservoir of knowledge and experience existing in this field and the studies undertaken by the UN, UNIDIR, the IAEA and non-governmental groups should all be drawn upon by government officials involved in the peace process. For example, there are lessons to be learnt from the Iraqi case. The IAEA and the United Nations Security Council special Commission (UNSCOM) gained great experience in the dismantling of weapons of mass destruction. The road towards the establishment of the zones is bumpy but with a political will the destination can be reached. Others have succeeded in Antarctica, Latin America, the South-Pacific, SouthEast Asia and Africa may be with less difficulties. We ought to be reminded that South Africa on the road to majority rule abandoned nuclear weapons, which opened the way to the establishment of a nuclear-weapons-free zone in Africa. It is hoped that Israel on the road to a just and comprehensive peace settlement in the Middle East would give up its nuclear option, which would lead not only to the establishment of a nuclear- free-zone but to the more ambitious objective of establishing a zone free of weapons of mass destruction in the Middle East. Needless to say that a number of Middle Eastern States have not yet adhered to the NPT as well as to the Chemical and

Biological conventions. The 1990 UN study on a nuclear-weapon-free zone and the 1996 study on a zone free of weapons of mass destruction encourage all States of the region to follow a multifaceted and interdisciplinary regional approach in eliminating and controlling all weapons of mass destruction. They both provide to them not only food for thought but also basic ingredients ready to be used in the making of the two zones.

Following endnotes

(1) For a full account of the initiative and its examination by successive sessions of the UN General Assembly, see Mahmoud Karem, A nuclear-weapon-free zone in the Middle East. Problems and Prospects, (New York, Westport, Connecticut: Greenwood Press, 1988).
(2) UN General Assembly resolution 43/65 of 7 Dec. 1988, Paragraph 8.
(3) UN Doc. A/45/435, 10 Oct.1990.
(4) UN Doc. A/10027/ADD.1.
(5) See Conference on Disarmament Doc. CD/989,20 Apr. 1990.
(6) UN Doc. S/23500, 31 Jan. 1992.
(7) For an account of ACRS see Bruce Jentleson, The Middle East Arms Control and Regional Security(ACRS) Talks: Progress, Problems and Prospects (San Diego: Institute for Global Conflict and Cooperation, University of California), IGCC Policy Paper 26, Sept. 1996.
(8) Jan Prawitz and James F. Leonard, A Zone Free of Weapons of Mass Destruction in the Middle East (New York and Geneva, 1996) (UNIDIR/96/24).
(9) For the text of the African Nuclear-Weapon-Free Zone Treaty, see Arms Control Today, Dec. 1995/Jan. 1996, pp. 15-20.
(10) See NPT/.CONF.1995/32 (partI), pp. 13-14.
(11) Status of Multilateral Arms Regulations and Disarmament Agreements (New York: United Nations, 1988, Third Edition:1987), p. 49.
(12) Arms Control Today, loc. cit., p.15.
(13) Status of Multilateral Arms Regulations, op. cit., pp. 5-21.
(14) Moataz M. Zahran, "Towards Establishing a Mass-Destruction- Weapon-Free Zone in the Middle East", Institute for Diplomatic Studies, Ministry of Foreign Affairs of the Arab Republic of Egypt, Oct. 1992, p. 26.
(15) Technical Study on Different Modalities of Application of Safeguards in the Middle East. IAEA-GC (XXXIII)/ 887,29 Aug. 1989.
(16) Ibid.
(17) Application of IAEA safeguards in the Middle East. IAEA GC (XXXVII)/1072, 6 Sept. 1993.
(18) Modalities for the Application of Safeguards in a Future Nuclear-Weapon-Free Zone in the Middle East. An International Atomic Agency Workshop, 4-7 May 1993.

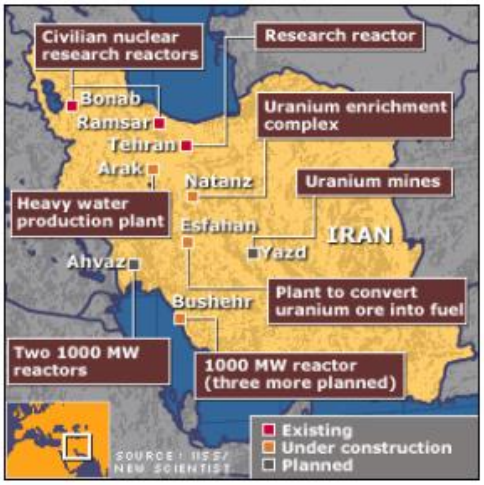


Suspected WMD Sites in Iraq, subsequently found inactive

Syrian reactor destroyed in 2007 by Israel

Egypt	Yes	July 1, 1968	Ratified
Iran	Yes	July 1, 1968	Ratified
Iraq	Yes	July 1, 1968	Ratified
Israel	No	---	---
Jordan	Yes	February 11, 1970	
Kazakhstan	Yes	Spring 1994	Acceded
Kuwait	Yes	August 1968	Ratified
Kyrgyzstan	Yes	July 5, 1994	Acceded
Lebanon	Yes	July 1, 1968	Ratified
Libya	Yes	July 1968	Ratified
Oman	Yes	January 23, 1997	Acceded
Palestine	No	---	---
Qatar	Yes	Spring 1989	Acceded
Saudi Arabia	Yes	October 3, 1988	Acceded
Syria	Yes	July 1, 1968	Ratified
Tajikistan	Yes	January 17, 1995	Acceded
Turkey	Yes	January 28, 1969	Ratified
Turkmenistan	Yes	September 29, 1994	Acceded
United Arab Emirates	Yes	September 26, 1995	Acceded
Uzbekistan	Yes	May 7, 1992	Acceded
Yemen	Yes	September 23, 1968	Ratified

[a] Ratification and ascension have the same legal effect as ratification. Usually occurs after the treaty has entered in to effect.



IV. Role of the United Nations

Nuclear Weapons Free Zones: The United Nations has defined "Nuclear Weapons Free Zones" as a multilateral agreement which bans the use of, development of, and deployment of nuclear weapons in a given area which includes oversight mechanisms. There are currently nine nuclear-free zones: the Antarctic, outer space, Latin America/the Caribbean, the seabed, the South Pacific, the ASEAN nations, Mongolia, Central Asia, and Africa.

- *Resolution A/RES/67/28*: Established a nuclear-weapon-free zone in the Middle East in 2012.
- *Resolution A/67/412*: In December of 2012, the Disarmament and International Security First Committee of the UN General Assembly noted the risk for nuclear proliferation in the Middle East and calls on Israel to join the NPT.

Figure - Nuclear R&D Sites in Iran

- *Security Council Resolution 1540*: Unanimously adopted in April 2004, this resolution recognizes the threat of non-state proliferation and calls upon U.N. Member States to develop and enforce all appropriate measures against the proliferation of all WMD, including nuclear weapons. It also requires that all states use domestic legislation to criminalize non-state actor involvement in WMD proliferation. Finally, it formed the ad-hoc 1540 committee charged with implementing the resolution. The initial mandate was extended for two years first by SC Resolution 1673 and then SC Resolution 1810, and finally for ten years by Resolution 1977.
- *Security Council Resolution 1887*: Unanimously adopted in September 2009, this resolution calls upon all member countries to adhere to the NPT, to cooperate with the IAEA, and to establish domestic measures to reduce nuclear weapons stockpiles.

However, there are five articles most pertinent to today's issues with DPRK:

- Article I: Nuclear Weapons States agree not to disperse nuclear weapons to non-Nuclear Weapons States.
- Article II: All non-Nuclear Weapons States agree not to receive or manufacture nuclear devices.
- Article III: All non-Nuclear Weapons states must work in conjunction with the IAEA to implement safeguards against the acquisition of nuclear weapons.
- Article IV: Signatories have a right to civilian nuclear technology. All exchanges of nuclear technology for peaceful means may continue.
- Article X: Signatories must give three months' notice prior to withdrawing from the treaty.

Comprehensive Nuclear Test Ban Treaty (CTBT)

was completed in 1995 and passed by the UN General Assembly in 1996. Since its passage, 159 states have ratified the CTBT and 24 have signed but not ratified. Of the recognized nuclear weapons states, most have signed, including Britain, China, France and Russia. Unfortunately, in order for the treaty to enter in to force, it needs 44 ratifying states including all of the Nuclear Weapons States outlined by the NPT. Eight of the required states have signed the treaty but have failed to ratify it including the US, China, Egypt, Iran, and Israel. India, North Korea, and Pakistan have not signed the treaty. The United States has signed the treaty, although the Senate refuses to ratify it. The Treaty requires party states to refrain from partaking in any nuclear test explosions nor permit these types on explosions on that country's sovereign territory. It also requires each party to refrain from causing, encouraging, or participating in the carrying out of any test explosion.

Relevant International Treaties and Policies

Nuclear Non-proliferation Treaty: This treaty was opened for signature on 1 July 1968 and entered in to force in March 1970. It recognizes five "nuclear-weapons states": The United States, The Russian Federation, United Kingdom, France, and China. The NPT is the most widely ratified arms limitation agreement in history. However, there are five countries who are non-party to the treaty who are either believed to possess nuclear weapons or have publically professed their possession of such technology: Israel, DPRK, India, and Pakistan. There are ten tenants of the NPT.

E .Bloc Positions

- China opposes the spread of nuclear weapons, but also respects the sovereign rights of all countries to self-defense, as agreed under the UN Charter. Since the early 1990s China has become more engaged in nonproliferation, participating in international efforts to stop the spread of nuclear-weapons related technologies, especially to non-state actors (terrorists). China above all stresses the need for balanced international responses, including guarantees to the security of nonnuclear countries.
- European Union is a leading proponent of the establishment of an NWFZ in the Middle East. The European Union largely takes a backseat to the United States when it comes to efforts at preventing proliferation; however, in 2012, Finland agreed to host a conference between Middle Eastern states on establishing a NWFZ, although the meeting never occurred.
- Iran: Iran maintains that its nuclear program exists for purely peaceful purposes; however, it frequently resists IAEA inspections or highly regulates them. Publically, Iran states that it is in favor a nuclear weapons free Middle East. Intense sanctions against Iran have thus far failed to deter it from pursuing its nuclear initiative.
- League of Arab States: Arab countries are strongly critical of international tolerance of Israel's nuclear program and the refusal of some nuclear-weapons states to press Israel to abandon its WMD. Egypt is the leader of the Arab League on this use. Egypt has long spearheaded the concept of a Nuclear Weapons Free Zone in the Middle East. In 2013, it unanimously agreed to support an Egyptian proposal to move toward an NWFZ in the region. It is unclear how fully each individual member supports the proposal.
- The Nonaligned Movement (NAM), with 120 members is the UN's most powerful vote bloc. Its members generally support a Middle East Nuclear Weapons Free Zone. The NAM also demands negative security assurances for all nonnuclear weapons states (pledges by nuclear powers not to attack or use their forces to intimidate).
- United States: The United States remains firmly against the proliferation of nuclear weapons to any state, and is currently involved in high-level talks with the Iranian government concerning its nuclear program. But the United States refuses to permit the UN to press Israel on nuclear issues. The United States has led the charge for international non-proliferation and has led or participated in the removal of many Middle Eastern states' nuclear programs, most notably Libya's in 2003. But the United

No First Use

No first use is the policy of only using nuclear weapons in a defensive manner. It is the professed policy of India and Pakistan. Only China and India have made clear no-first use pledges. The Russian Federation accepted NFU until 2000, when policy was made conditional. The United Kingdom has not explicitly backed NFU, but pledged to only use nuclear weapons in retaliation. The United States refuses to make a non-first use pledge. Middle

East Nuclear Weapons Free Zone (NWFZ)

is the preferred option of most countries in the region, especially the members of the League of Arab States. Led by Egypt, they maintain that regional security against nuclear weapons can only be assured if all states in the region forgo the possibility. For Israel—the only nuclear weapons state in the region--this would mean giving up its suspected nuclear weapons. Israel's cooperation would require security guarantees from Arab countries in the region and outside powers, which few have been willing to give.

F.Bibliography

Wikipedia:

1. Israeli Nuclear Weapons: http://en.wikipedia.org/wiki/Nuclear_weapons_and_Israel#Dimona_1956.E2.80.931965
2. Nuclear Non-Proliferation Treaty: http://en.wikipedia.org/wiki/Treaty_on_the_Non-Proliferation_of_Nuclear_Weapons
3. Stuxnet: http://en.wikipedia.org/wiki/Stuxnet
4. Syrian Nuclear Weapons: http://en.wikipedia.org/wiki/Syria_and_weapons_of_mass_destruction#Nuclear_program
5. WMD in Iraq: http://en.wikipedia.org/wiki/Iraq_and_weapons_of_mass_destruction
6. UN Security Council Resolutions Concerning Nuclear Proliferation: http://en.wikipedia.org/wiki/Category:United_Nations_Security_Council_resolutions_concerning_nuclear_proliferation

United Nations Resources

1. United Nations Office for Disarmament Affairs (UNODA)
    a. Overview of the NPT: http://www.un.org/disarmament/WMD/Nuclear/NPT.shtml
    b. Disarmament Treaties: http://disarmament.un.org/treaties/
    c. Nuclear Weapons Free Zone in the Middle East: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/67/28
2. UN General Assembly Resolutions on Disarmament: https://gafc-vote.un.org/
3. 1540 Committee: http://www.un.org/en/sc/1540/

Other Useful Sources

1. Federation of American Scientists – Status of World Nuclear Forces: http://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/
2. Nuclear Threat Initiative: http://www.nti.org/country-profiles/
3. Iran Tracker – Tracking Iran's Nuclear Program http://www.irantracker.org/nuclear-program
4. Chronology of Interaction Between the IAEA and Iran http://www.iaea.org/newscenter/focus/iaeairan/iran_timeline8.shtml

G. Questions to Be Addressed

1. *Is it possible to create a Nuclear Weapons Free Zone in the Middle East?*

2. What measures should we take in the maintenance of world peace and security as stipulated by the UN Charter?

3. The techinal challenges for Non-Proliferation Treaty (NPT)

4. Should the international community prohibit some legal nuclear activities due to weaknesses of international safeguards?

5. Is nuclear deterrence still relevant between states?

6. How can NPT member states be kept on board?

IV.Introduction to Agenda Item B

(The Weaponization of Outer Space)

INTRODUCTION

Space has intrigued humanity from its very beginning. However, it was only after the Second World War that human technology made it possible for us to acquire a deeper knowledge and understanding of space. Long range missiles, rockets and radio technology all contributed to the advancement of space-related knowledge. Nevertheless, these advancements could also be used for military purposes, and during the Cold War, the so- called "space race", simultaneously an arms race, held extremely dangerous potential not only for certain nations, but humanity as a whole. Over the last decades, the United Nations have increasingly considered the possibility of an arms race outer space an issue of grave importance, and thus one that should be addressed. The Disarmament Committee has been the UN body directly and heavily involved with the issue for many decades.

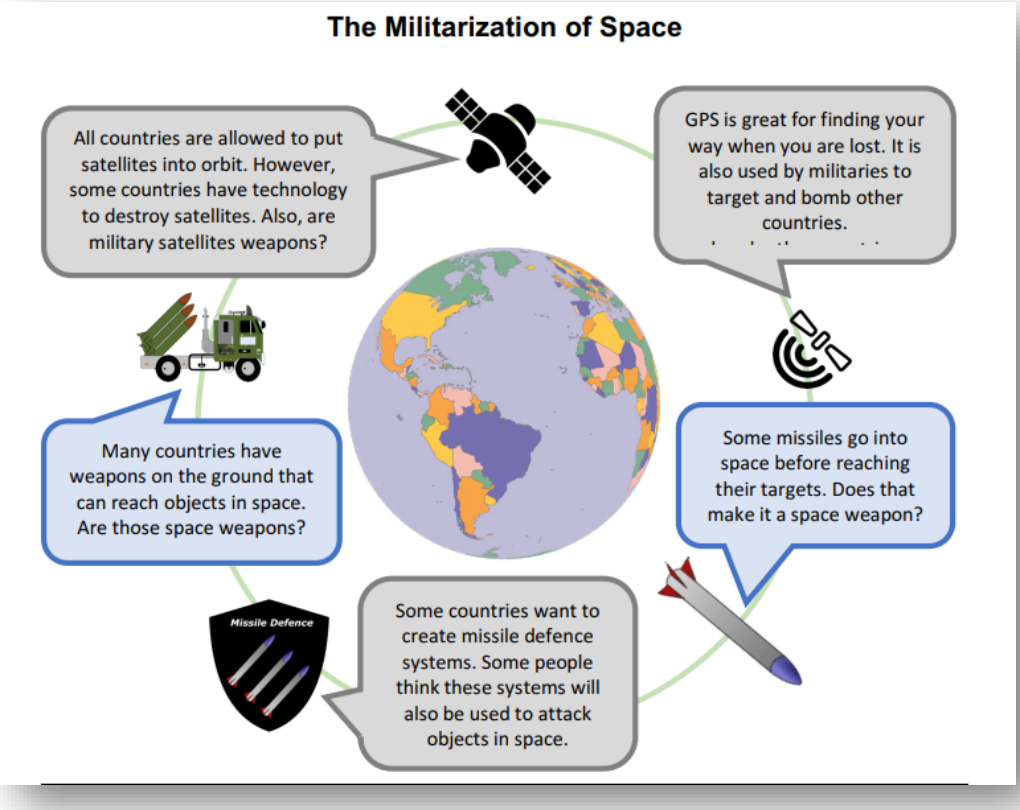
In the aftermath of the Cold War and significant technological advancement, the vast majority of countries around the world are also increasingly concerned about the weaponisation of outer space – albeit to different degrees. Within this context, the UN is –as mentioned above- key in addressing such concerns, considering it the duty and obligation of both the UN and individual Member States to avoid an arms race in outer space. Thus, all UN actions relating to a possible arms race in outer space are measures taken in advance to make certain that humanity will not be endangered. International co-operation regarding the issue has led to many agreements and treaties, as well as the issue being very often discussed in the United Nations Conference on Disarmament. Some of the most important treaties include the Outer Space treaty and the Moon agreement. The United Nations believe that space should be used for peaceful purposes and diplomatic efforts from within the organization have contributed towards that goal. However, the most important issue lies with the fact that even though weapons of mass destruction have been banned from space, the same does not apply to other types of weaponry. Thus, the delegate of the Disarmament and International security committee must make sure to consider and adress the "grey areas" of past proposals and decisions regarding the issue.An armsrace in outerspace might not be happening at the moment, but the United Nations is the sole international body capable of ensuring that this development won't take place in the future either.

Historical Background

After the end of the Second World War, technology had advanced at extremely fast rates. During the war, most of the superpowers and in particular the United States and the Soviet Union, had developed advanced military technology as a means ensuring they would win the war. However, these developments and advancements were also useful in the field of space exploration. Missiles capable of being launched remotely and exit the earth's atmosphere provided a great opportunity for humankind to explore what we knew almost nothing about, namely outer space. Nevertheless, from the 1950s onwards the clash between the USSR and the US, which has been known as "the Cold War", resulted in the developed space technologies used as a means of the US and Soviet Union competing for supremacy in space exploration. Simultaneously, this "space race" also became almost synonymous with an arms race, as most technologies created for space exploration were immediately adapted to be used for military purposes. Even though the Cold War did not result in a full-on war between nations and space remained a place of human cooperation, a form of an armsrace forspace

indeed took place. Thisshould be taken into account when discussing the issue in the Disarmament Committee. An arms race in outer space might not be happening at the moment, but history has shown us the danger of such an event and thus it is our duty and obligation to ensure that outer space will remain an example of how humans, under the umbrella of the United Nations, co-operate in order to collectively advance our species, and not as an example of show of force or violence in any kind. After the creation of the United Nations in 1945, the organization has been actively engaged in promoting co-operation and the peaceful use of space. In 1959; the United Nations General Assembly established the Committee on the Peaceful Uses of Outer Space (COPOUS). The goal of the committee has traditionally been to encourage research regarding space exploration and outer space in general. Additionally, the committee also deals with the legal aspect of space and all the different pace programs sponsored by the UN.

During the Cold War, many agreements were signed regarding the prevention of an arms race in outer space (all will be included in the relevant part of the Study Guide), the most important of them being the Outer Space treaty, the Registration of Objects Launched into Outer Space (1975) and the socalled Moon Agreement. Nevertheless, one should keep in mind that these treaties and agreements where not enough to ensure that an arms race in outer space would be avoided. Even though certain types of weapons like W.M.D (weapons of mass destruction) were formally banned from space, there was no common agreement regarding other types of weapons. Many nations continue to believe that the United Nations hasstill not done enough to completely ensure the prevention of a space armsrace, with the so-called PAROS (Prevention of an Arms Race in Outer Space) has been an issue heavily debated during the years following the end of the Cold War.



MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

United States of America

The United States has openly criticized the usefulness of discussionsregarding armamentsin outer space in the context of the UN. The U.S critical stance towards PAROS should be examined both positively and negatively. On the one hand it can provide "food for thought" about the mistakes that the UN has made regarding the issue and how any future negotiations can be improved in order to produce substantial results. On the other hand, U.S position stands in the way of any outer space related discussions having credibility. While the U.S continues to criticize the role of the UN when it comes to PAROS, the credibility of the discussions themselves decreases.

People's Republic of China

China has played an extremely active role in the Conference on Disarmament (CD) over the last decade. Propositions from the Chinese delegation regarding PAROS often deal with the legal aspect of outer space. The nation has also advocated in favor of strengthening the conference on disarmament and specifically the prevention of an arms race in outer space.

Canada

Canada's contributions regarding the prevention of an arms race in outer space has been numerous from the beginning of the Conference on Disarmament. They usually aim at building confidence and trust between nations and generally providing a framework for international co- operation in outer space. Two of the most significant Canadian initiatives have been CD/1815 "Transparency and confidence building measures in outer space" and CD/1569 "Proposal concerning CD action on outer space".

Russian Federation

Russia has also been particularly active in the CD and has mostly worked alongside China. Some major Russian actions regarding the prevention of an arms race in outer space have been CD/1710 in 2003 and alongside China CD/1679 "Possible elements of the future international legal instrument on the prevention of deployment of weapons in outer space, the threat or use of force against outer space objects"

Date	Description of Event
August 21, 1957	First intercontinental ballistic missile (ICBM) (modified to be used in Sputnik 1)
April 12, 1961	First human spaceflight (Yuri Gagarin)
October 10, 1967	Outer Space Treaty
July 20, 1969	First humans on the Moon (Apollo 11)
July 15, 1975	First multinational human-crewed mission (Apollo-Soyuz Test Project)
August 19, 1993	Report of the Ad Hoc Committee on PAROS (Conference on Disarmament)
February 4, 1999	Proposal concerning CD action on Outer Space
June 28, 2002	Possible elements of the future international legal instrument on the prevention of deployment of weapons in outer space, the threat or use of force against outer space objects (CD-PAROS)
June 23, 2006	Basic Documents of the Conference on Disarmament related to the Prevention of an
June 15-16, 2009	Conference: "Space Security 2009: Moving towards a Safer Space Environment"
March 29-30, 2010	Conference organized by UNIDIR entitled "Space security 2010: From foundations to negotiations"

Timeline of events

UN INVOLVEMENT: RELEVANT RESOLUTIONS, TREATIES AND EVENTS

Outer Space Treaty

This treaty forms the basis for international space law and entered into force on 10 October 1967. It bans weapons of mass destruction from space and says no country can 'claim' the moon or any other planet or object. It also maintains that space should be used for peaceful purposes.

The Rescue Agreement

This agreement gives more detail about Article V in the Outer Space Treaty and entered into force on 3 December 1968. It states all members of the treaty should help astronauts that need help and this was meant to protect astronauts who accidently landed in other countries. Also, if space technology lands in another country it must be returned.

Liability Convention

This document states that a country that launches something into space is responsible if it causes damage and it entered into force on 1 September 1972. It has only been used once when the USSR satellite Kosmos 954 crashed in Canada in 1978 and left radioactive pieces across Northern Canada. Canada charged the USSR C$6 million. In 1979 NASA's Skylab crashed in Australia and NASA was fined $400 for littering,but never paid.

Treaties & Agreements Registration Convention

In this convention each state needs to tell the UN about the orbits of all their space objects and it entered into force on 15 September 1976. Today, over 92% of all space objects are registered. 1200 of the objects orbiting Earth are satellites.

Moon Agreement

This treaty says the moon and all natural objects in space should benefit all countries and people and it entered into force on 11 July 1984. It bans military use of the moon and other natural objects in space. However, this is a failed treaty, because only 17 countries have ratified it.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Before dealing with the prevention of an arms race in outer space, one must understand that the issue does not present an actual, currently happening issue. Instead, any discussions relating to the topic are being made in order to avoid the creation of such a dangerous world issue. That being said, in 1959, the UN General Assembly established the Committee on the Peaceful Uses of Outer Space (COPUOS) in Resolution 1472 (XIV). This committee identified areas for international cooperation in the peaceful uses of outer space, devised programs to be undertaken by the United Nations, encouraged research on matters relating to outer space, and studied legal problems arising from the exploration of outerspace. Then, with the signing of the Outer Space treaty in 1967, a legal framework was created which would later be the basis of the international space law. The treaty was followed by plenty other international agreements, many under the umbrella of the United Nations. The most important step was the creation of the conference on disarmament (CD) in 1979. This conference hasserved as a meansfor the UN to promote disarmament generally and specifically when it comes to outer space. However, the issue of the peaceful use of outer space re-emerged in 1993 when more actions were taken by the United Nations. From the end of the 1990s, PAROS has become an important issue for the international community and conferences, negotiations and relevant resolutions, which constantly promote a peaceful use of space. To this day, the conference on disarmament continues to discuss relevant issues in order to prevent such issue from taking place. Many attempts have taken place in order to "solve" the issue, however, are they enough? Will the measures taken be enough to ensure that a space-related arms race won't take place? Probably not. Thus, its up to the delegates of the Disarmament and international Security Committee to further propose measures that will strengthen co-operation in the field of outer space

Unresolved Issues

Several issues regarding the development and effects of space militarization still remain unresolved with sometimes little to no consensus on what an appropriate solution can be. A glaring issue that remains is the extent of military action that can be justified for use in space. While there are treaties that explicitly ban testing nuclear weapons and placing nuclear weapons in space, there has been no treaty discussing the implementation of conventional weapons in space. With the current United States administration pursuing a military arm to deal with the realms of space, it remains unclear on how they will operate. Treaties signed in the past have also suggested that space exploration should only be reserved for peaceful exploration. Debate still swirls if such a standard can exist with the creation of a space oriented military forces and technologies. The term "space" itself is an ambiguous and undefined term. While International law has defined that space is the minimum altitude where orbit can be achieved, there isn't a consistent altitude at where this is achieved. Commonly in scientific circles space is defined as the Kármán line, at 100 kilometers above the sea level. The Fédération aéronautique internationale (FAI) has been using this as the international standard in tracking arounatics. The United States Air Force however defines astronauts of having flown above 80 KM above sea level, the level between the mesosphere and the thermosphere. There are also arguments that there should not be any level to define the limit of space, however setting such a limit will be crucial on discussing where weapons can be used and tested.

BIBLIOGRAPHY

- Coburn, Commentary Jesse. "Is Space Warfare Inevitable?" Quartz, Quartz, 5 Oct. 2015, qz.com/516141/is-space-warfare-inevitable/.
- "Proposed Prevention of an Arms Race in Space (PAROS) Treaty." Nuclear ThreatInitiative
- Ten Years of Building a Safer World. N.p., n.d. Web. 28 June 2017.
- "CD Documents Related to Prevention of an Arms Race in Outer Space – UNODA." United Nations. United Nations, n.d. Web. 28 June 2017.
- "A/RES/51/44. Prevention of an Arms Race in Outer Space." United Nations. United Nations, n.d. Web. 28 June 2017.
- "Prevention of an Arms Race in Outer Space ." Federation of American Scientists :: Prevention of an Arms Race in Outer Space. N.p., n.d. Web. 29 June 2017.
- "Outer Space." Critical Issues. N.p., n.d. Web. 29 June 2017

Recommended reading:

https://thebulletin.org/2019/06/the-outer-space-treaty-and-the-weaponization-of-space/
https://www.thespacereview.com/article/3647/1
https://www.tandfonline.com/doi/abs/10.1080/00963402.2019.1628458?journalCode=rbul20
https://www.globalpolicyjournal.com/blog/12/03/2018/weaponization-and-outer-space-security

FURTHER QUESTIONS

- Space militarization has been being pursued since the very beginnings of space exploration. Going forward do we lean into and regulate militarization or focus on de escalation?
- How do we create accountability for member states to follow regulations?

- As we move forward with space exploration and utilization should past treaties be subject to change?
- Weapons of mass destruction are banned in space but it can be argued that the most primitive space weapons could be used to cause mass devastation. How do we reconcile this?
- What are the key topics stopping space resolutions from passing and how can this committee get past that?

Wishing great luck and mindfullness,
Kindest regards,
Mehmet BÜYÜK – Under Secretary General