FIRST PREPARATORY COMMITTEE MEETING FOR THE 11TH REVIEW CONFERENCE
OF THE NUCLEAR NON-PROLIFERATION TREATY
VIENNA, 31 JULY TO 11 AUGUST 2023

Fissile Material-Related Stresses on the Non-Proliferation Regime: The AUKUS Submarine Deal, Lack of Universality of the Additional Protocol, Weaknesses in Nuclear Materials Security[1]

Lawyers Committee on Nuclear Policy
26 July 2023

I. AUKUS Submarine Deal

Under the Australia-United Kingdom-United States (AUKUS) submarine deal, as presently planned Australia would operate nuclear-powered submarines supplied by the United States and United Kingdom and eventually build its own.[2] The submarines' reactors would be fueled with weapons-grade highly enriched uranium (HEU). This unprecedented transfer by nuclear weapon states of tons of weapons-usable HEU to a non-nuclear weapon state may not violate the express terms of the NPT; however we, alongside other non-governmental organizations, urge member states to close this "loophole." Although parties to the AUKUS deal have said there will be adequate safeguards against diversion of the fuel to weapons purposes, that assertion has been questioned.

China filed two working papers[3] for the Review Conference held in 2022 raising doubts as to whether the transfer can be adequately safeguarded and alleging that the AUKUS deal threatens the Southeast Asia and South Pacific Nuclear-Weapon-Free Zones. The Netherlands, Norway, and Republic of Korea filed a working paper for that conference,[4] not specifically mentioning

[1] This paper is complementary to the LCNP paper also submitted to the 2023 NPT PrepCom, Three Issues Confronting the Non-Proliferation/Disarmament Regime: Nuclear Threats, Security Assurances, and Nuclear Sharing,

[2] See Kelsey Davenport, "AUKUS Plans Announced," Arms Control Today, April 2023. See also Toby Dalton and Ariel Levite, "AUKUS as a Nonproliferation Standard?", Arms Control Today, July/August 2023, discussing issues relating to application of safeguards to the arrangement.

[3] "Nuclear non-proliferation," NPT/CONF.2020/WP.29, 29 November 2021; and "Nuclear-weapon-free zones and nuclear issues in the Middle East," NPT/CONF.2020/WP.30, 29 November 2021.

[4] "Minimizing and eliminating highly enriched uranium in civilian stocks and use,"

submarines, which argues generally that limiting the locations and use of HEU is important to maintenance of the non-proliferation regime. In past years US policy has also recognized the validity of this view, e.g. in the campaign to replace HEU in civilian reactors.[5]

Even assuming safeguards are sufficient, we share that widespread concern over the precedent that would be set by the HEU transfer at a time when several other states—including Iran—are also seeking to acquire nuclear-fueled submarines. Member states should seek to uphold and strengthen the NPT by opposing any extension of uses for HEU, specifically calling on the parties to the AUKUS submarine agreement to substitute the use of non-weapons grade low enriched uranium (LEU) as reactor fuel. Both China and France already use LEU in their submarine reactors; even if the use of HEU provides additional convenience or cost savings, that does not justify increasing the pressure on an already stressed non-proliferation regime.

II. Increased Proliferation Risk from Civilian Nuclear Programs

The diminished credibility of negative security assurances has also increased proliferation risk. Even before the invasion of Ukraine, some non-nuclear weapon member states of the NPT had at least considered the acquisition of nuclear weapons.[6] Many of these states have reserved the right to enrich uranium and to use processes producing weapons-usable plutonium.[7] Their is general awareness among member states that Ukraine, the most direct victim thus far of violated negative security assurances, is among the small number of states that have voluntarily relinquished nuclear weapons.[8]

One source of the anxiety is the fact that many member states have not yet accepted the IAEA Model Additional Protocol, with its greatly strengthened[9] anti-proliferation safeguards. Universal adoption of the Model Additional Protocol could substantially mitigate proliferation risks, e.g.by reassuring a member state which otherwise might be impelled to launch a nuclear weapons program in the mistaken belief that a regional rival was doing so. During this review cycle all non-nuclear weapon member states should be urged to adopt it.

NPT/CONF.2020/WP.14, 8 November 2021.

[5] Frank N. von Hippel, "The Australia-UK-U.S. Submarine Deal: Mitigating Proliferation Concerns," Arms Control Today, November 2021, pp. 10-11.

[6] See, e.g., Ludovica Castelli, "Why Does Saudi Arabia Want to Acquire the Nuclear Fuel Cycle?" The Stimson Center, March 2023; BBC News, "Nuclear weapons: why South Koreans want the bomb," 22 April 2023

[7] Henry Sikolsky, "Will Seoul and Washington make Riyadh nuclear weapon ready?", Bulletin of the Atomic Scientists, 26 July 2022

[8] See Mariana Budjeryn, *Inheriting the Bomb*, Johns Hopkins University Press, 2023

[9] Arms Control Association, "IAEA Safeguards Agreements at a Glance," 2022

III. Alarming Weaknesses in Nuclear Materials Security

In July 2023 the Nuclear Threat Initiative released[10] the latest edition of its Nuclear Security Index, a survey of nuclear material safeguards in 195 countries and Taiwan. For the first time, the survey found that overall security conditions were "regressing." Among the findings:

- Stocks of weapons-usable plutonium have been rapidly increasing;
- More than one third of countries with nuclear facilities have no regulatory requirements for safeguarding nuclear infrastructure in case of natural or human-caused disaster;
- Many states with nuclear facilities have made little or no progress in developing security culture and insider threat awareness;
- "The bottom line is that the countries and areas with the greatest responsibility for protecting the world against catastrophic acts of nuclear terrorism are derelict in their duty."[11]

These developments could scarcely come at a worse time. With international tensions mounting, arsenals being modernized and in some cases expanded, and experts warning that developing technologies are increasing the dangers of nuclear war by accident or miscalculation,[12] there is simply no excuse for permitting this preventable source of nuclear risk to increase. During this review cycle, all member states should commit to prompt and serious action.

[10] Nuclear Threat Initiative, "We are falling short on nuclear security at a dangerous time," 18 July 2023
[11] Nuclear Threat Initiative, *Falling Short in a Dangerous World*, July 2023, p. 7.
[12] See, e.g., Federation of American Scientists, "Disruptive Technologies and Their Potential Threat to Strategic Stability and National Security," 2018, available through www.fas.org; Edward Geist and Andrew Lohn, "How Might Artificial Intelligence Affect the Risk of Nuclear War?", Rand Corporation, 2018; Nuclear Threat Initiative, "Nuclear Weapons in the New Cyber Age", 2018, available through www.nti.org; Beyza Unal and Patricia Lewis, "Cyber Security of Nuclear Weapons Systems," available through www.chathamhouse.org; Stockholm International Peace Research Institute, "Artificial Intelligence. Strategic Stability, and Nuclear Risk," June 2020, available through www.sipri.org; European Leadership Network, "New Technologies, Complexity, Nuclear Decision Making, and Arms Control," June 2021, available through www.europeanleadershipnetwork.org. For additional reports, see Christopher Cyba, "New Technologies and Strategic Stability," Daedalus, Vol. 149, No. 2.