Statement by Kevin Conole, United States Representative, on Agenda Item 15, "Use of Nuclear Power Sources in Outer Space"
February 8, 2023

Thank you, Chair. The United States calls on Member States and international intergovernmental organizations that are considering the use of space Nuclear Power Sources to implement the joint Safety Framework developed in 2009 by this Subcommittee, in partnership with the International Atomic Energy Agency. The United States has actively participated in the NPS Working Group, which has provided a useful forum to discuss specific aspects of the Safety Framework's guidance and to learn from presentations and papers. Our experience of more than 30 missions involving space NPS during the last 60 years allows us to offer mission-specific experiences implementing the guidance of the Framework.

Since 1961, nuclear power has opened the solar system to exploration, allowing us to observe and understand dark, distant planetary bodies that would otherwise be unreachable. Since February 2021, the Mars 2020 Perseverance rover, powered by radioisotope power, has been exploring the Jezero Crater, seeking signs of ancient life and collecting samples of rock and regolith for possible future return to Earth. Perseverance brought with it the world's first extraterrestrial rotorcraft "Ingenuity," which has since flown more than 40 times. Another example of exploration uniquely enabled by nuclear power in space is the Dragonfly mission. Scheduled to launch to Titan in 2027 and arrive at Saturn in 2035, Dragonfly adds nuclear power to enable unlimited flight with eight rotors to fly like a large drone on multiple sorties through the atmosphere. All NPS missions have been and will continue to be implemented using processes consistent with the Safety Framework and in the spirit of the Principles Relevant to the Use of NPS In Outer Space.

Use of nuclear power sources for in-space propulsion of spacecraft is a potential technology for crew and cargo missions to Mars, and scientific missions to the outer solar system, enabling faster and more robust human and robotic missions. Expanding into a new era for space exploration depends on mass-efficient, high-energy solutions to power deep space vehicles, operate in harsh environments, and increase mission flexibility. NASA nuclear technology investments are targeting power for surface operations and propulsion for fast-

transit, deep space missions, all with the ability to reliably operate without the need for repair or refueling. NASA's goals, enabled by nuclear technologies, provide for exciting advances in scientific objectives and human exploration, ushering in a new space age that enables a human presence on bodies beyond Earth.

The United States remains committed to the Safety Framework and the safety intent of the Principles as we continue improving the efficiency and effectiveness of our processes. NASA and the U.S. Department of Energy are partners in ensuring the safe use of these vital space power technologies that enable and enhance such ambitious and exciting exploration missions for the benefit of humankind.

Chair, the United States believes the Principles and the Safety Framework provide a comprehensive foundation to support the safe use of nuclear power in space. The guidance provided by the Safety Framework enables new approaches to safety based upon continuing advances in knowledge and practice since the adoption of the Principles. The Safety Framework allows for States and international intergovernmental organizations to innovate new approaches based on the expansion of knowledge and best practices gained from experience, and thereby continuously improve safety. The practical application of the Safety Framework satisfies the safety intent of the Principles, and therefore is sufficient guidance to States and international intergovernmental organizations seeking to ensure the safe development and use of nuclear power in space.

The United States supports continued opportunities and efforts to allow for the sharing of information in order to promote further understanding and awareness of effective processes to ensure the safe use of nuclear power in space. Accordingly, the United States supports a new mandate and workplan for the NPS Working Group. To further support these objectives in the NPS user community, the U.S. also supports the collection and analysis of relevant technical information about potential future uses of NPS in outer space, particularly those involving nuclear reactors, through the creation of a joint technical expert group with the IAEA, which would facilitate the exchange of knowledge and best practices in the development and use of space nuclear power and propulsion systems among governments, international/intergovernmental, academia, non-profit organizations, and private commercial entities, in order to promote the continued safe use of

nuclear power and propulsion systems in space, and to develop an analysis of the safety implications thereof for consideration by the NPS working group.

Chair, the United States Delegation extends our gratitude to the United Kingdom for its chairmanship of the NPS Working Group, the Secretariat for facilitating the work of the NPS Working Group and for the excellent translation services. Thank you, Chair.