



# General Assembly

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## Committee on the Peaceful

### Uses of Outer Space

Scientific and Technical Subcommittee

Forty-second session

Vienna, 21 February-4 March 2005

Agenda item 8

### Use of nuclear power sources in outer space

## Draft report of the Working Group on the Use of Nuclear Power Sources in Outer Space

1. At its 624th meeting, on 24 February 2005, the Scientific and Technical Subcommittee reconvened its Working Group on the Use of Nuclear Power Sources in Outer Space under the chairmanship of Alice Caponiti (United States of America).
2. At the 1st meeting of the Working Group, on 24 February, the Chairman recalled the tasks before the Working Group, as contained in the multi-year work plan covering the period 2003-2006 for developing an international technically based framework of goals and recommendations for the safety of nuclear power source (NPS) applications in outer space, which had been endorsed by the Scientific and Technical Subcommittee at its fortieth session (A/AC.105/804, annex III). The Working Group informed the Scientific and Technical Subcommittee of the overall progress that had been made to date in achieving the objectives and recommendations of the work plan for the period 2003-2006.
3. The Working Group had before it copies of the technical presentation entitled "Space nuclear power source technology development pathways for enabling future space exploration", which had been made by the representative of the National Aeronautics and Space Administration (NASA) of the United States, to the Scientific and Technical Subcommittee. The presentation concerned the content of relevant national (including bilateral and multilateral) space NPS programmes and applications planned or currently foreseeable.
4. The Working Group considered and revised a working paper submitted by its Chairman entitled "Interim progress report of the Working Group on Nuclear Power Sources in Outer Space of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space" (A/AC.105/C.1/L.278). The



revised text of the working paper, as agreed by the Working Group, is contained in A/AC.105/C.1/L.281.

5. The Working Group also considered and revised the proposed outline of objectives, scope and attributes for an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space (A/AC.105/L.253/Rev.1). The revised text, as agreed by the Working Group, is contained in A/AC.105/L.253/Rev.2.

6. Based on the revisions to document A/AC.105/C.1/L.278 agreed by the Working Group, the Working Group further considered and revised the preliminary draft of flow charts for potential implementation options for establishing an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space (A/AC.105/L.254/Rev.1). The revised text, as agreed by the Working Group, is contained in A/AC.105/L.254/Rev.2.

7. The Working Group agreed to hold, jointly with the International Atomic Energy Agency (IAEA), a technical workshop during the first two days of the forty-third session of the Scientific and Technical Subcommittee, to be held in February 2006. The plan for organizing and the initial terms of reference of the technical workshop are contained in document A/AC.105/C.1/L.281.

8. The Working Group recommended that its multi-year work plan be amended in order to allow for the organization and holding of the joint workshop as follows:

Year 2005:

(a) Review information from national and regional space agencies on the content of relevant national (including bilateral and multilateral) space NPS programmes and applications planned or currently foreseeable;

(b) Prepare a final outline of the objectives, scope and attributes of an international technically based framework of goals and recommendations for assuring the safety of planned and currently foreseeable space NPS applications;

(c) Organize and plan for a joint technical workshop with IAEA, to be held during the forty-third session of the Scientific and Technical Subcommittee, in February 2006;

(d) Hold an intersessional meeting during the forty-eighth session of the Committee on the Peaceful Uses of Outer Space, in June 2005, to finalize the plans for the joint technical workshop with IAEA.

Year 2006:

(a) Hold a joint technical workshop with IAEA during the first two days of the forty-third session of the Scientific and Technical Subcommittee and prepare a draft report on the workshop;

(b) Hold an informal meeting of the Working Group on Nuclear Power Sources in Outer Space during the forty-ninth session of the Committee on the Peaceful Uses of Outer Space, in June 2006, to prepare an updated report on

the joint technical workshop to be made available to the Scientific and Technical Subcommittee and IAEA;

(c) Hold an informal meeting of the Working Group on Nuclear Power Sources in Outer Space during the forty-ninth session of the Committee on the Peaceful Uses of Outer Space, in June 2006, to prepare a draft report based on the final outline of the objectives, scope and attributes of an international technically based framework of goals and recommendations, taking account of the updated draft report of the joint technical workshop.

Year 2007:

(a) Prepare the final report and recommend an implementation option to the Scientific and Technical Subcommittee;

(b) If the recommended implementation option is acceptable to the Subcommittee, prepare a new work plan to carry it out;

(c) If the recommended implementation option involves further joint activity with IAEA, commence early discussions with the Agency to carry that out.

9. The Working Group noted that the United States had offered to provide funds to cover the cost of two days of interpretation services and conference staff, as well as the electronic equipment necessary for holding the joint technical workshop.

10. A preliminary list of workshop objectives and topics was prepared by some members of the Working Group. The list, which has not been reviewed by all members of the Working Group and is included in the present report for the purpose of giving member States the opportunity to prepare for the intersessional meeting to be held in June 2005, at which time a final list of topics will be prepared, is as follows:

#### I. Objectives

- A. To enhance the proposed outline of objectives, scope and attributes for an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space
- B. To enhance the definition of potential implementation options for establishing an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space

#### II. Possible papers

##### A. Background

1. Presentation on planned and currently foreseeable nuclear power source applications in outer space and their scope
2. Unique design considerations for nuclear power source applications in outer space
3. National perspectives on the development of nuclear power source designs with respect to safety considerations

4. International Atomic Energy Agency activities in the development of international standards for safety

B. Pertinent to objective I.A.

1. Review of international documents and national processes potentially relevant to the peaceful uses of nuclear power sources in outer space
2. Minimum essential elements of a safety framework
3. Design safety considerations for launch and mission accidents

C. Pertinent to objective I.B.

1. Key issues in harmonizing IAEA and Scientific and Technical Subcommittee processes for establishing an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space
2. Implementation plan considerations for draft options 1 and 3 (A/AC.105/L.254/Rev.2, annex)

11. The Working Group agreed that member States and international organizations should be invited by the Secretariat to review the above preliminary list of potential topics and submit proposals for additional topics or possible amendments to the Secretariat prior to the intersessional meeting of the Working Group in June 2005.

12. The Working Group recommended that, in accordance with its recommended work plan as reflected in paragraph [...] above, the next intersessional meeting should be held in Vienna from 15 to 17 June 2005, during the forty-eighth session of the Committee on the Peaceful Uses of Outer Space.

13. The Working Group agreed to further discuss the following documents at its intersessional meeting to be held during the forty-eighth session of the Committee on the Peaceful Uses of Outer Space, with a view to finalizing the plans for a joint technical workshop with IAEA:

(a) Preliminary draft of flow charts for potential implementation options for establishing an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space (A/AC.105/L.254/Rev.2);

(b) Interim progress report of the Working Group on Nuclear Power Sources in Outer Space of the Scientific and Technical Subcommittee: planning and terms of reference for a technical workshop on the development of a potential safety framework for the use of nuclear power source applications in outer space (A/AC.105/C.1/L.281);

(c) The preliminary list of potential topics for the joint technical workshop on nuclear power sources in outer space, as contained in paragraph [...] above.

14. At its [...]th meeting, on [...] March 2005, the Working Group adopted the present report.