

**General Assembly**Distr.: Limited
15 June 2005

Original: English

Committee on the Peaceful**Uses of Outer Space**

Forty-eighth session

Vienna, 8-17 June 2005

Agenda item 7

**Report of the Scientific and Technical Subcommittee
on its forty-second session****Report of the Working Group on the Use of Nuclear Power
Sources in Outer Space of the Scientific and Technical
Subcommittee on its intersessional meeting, held in Vienna
from 13 to 15 June 2005****Objectives, topics and indicative schedule of work for a joint
technical workshop with the International Atomic Energy
Agency on a potential safety framework for nuclear power
source applications in outer space, to be held during the
forty-third session of the Scientific and Technical
Subcommittee, in February 2006****Note by the Secretariat**

1. At its forty-second session, held in Vienna from 21 February to 4 March 2005, the Scientific and Technical Subcommittee endorsed the recommendation of its Working Group on the Use of Nuclear Power Sources in Outer Space to hold a joint technical workshop on the objectives, scope and general attributes of a potential technical safety standard for nuclear power sources in outer space, in cooperation with the International Atomic Energy Agency (IAEA). The workshop is scheduled to take place during the forty-third session of the Scientific and Technical Subcommittee, in February 2006.

2. The Subcommittee also endorsed the recommendation of its Working Group that it continue intersessional work during the forty-eighth session of the Committee on the Peaceful Uses of Outer Space on the topics described in its multi-year work

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plan, as amended by the Subcommittee at its forty-second session, with a view to discussing and finalizing the organizational plans for the joint workshop.

3. As a result of deliberations during its intersessional meeting, held from 13 to 15 June 2005, the Working Group finalized a list of workshop objectives and topics and prepared an indicative schedule of work, including guidance for the preparation of papers and presentations to be made during the workshop.

4. The list of workshop objectives and topics and the indicative schedule of work are intended to assist the Working Group in the process of identifying speakers and participants prior to the workshop and are contained in annexes I and II, respectively, to the present document for consideration by the Committee.

Annex I

Joint technical workshop on a potential safety framework for nuclear power source applications in outer space: objectives and topics

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. Presentations on ongoing, planned and currently foreseeable nuclear power source applications in outer space and their scope and rationale.
 - 2. Unique design considerations for nuclear power source applications in outer space.
 - 3. National perspectives on the development of nuclear power source designs for use in outer space with respect to safety considerations.
 - 4. Current processes for the development of international standards for radiation protection and nuclear safety.
- B. Pertinent to objective I.A
 - 1. Summary of the review of international documents and national processes potentially relevant to the peaceful uses of nuclear power sources in outer space, as contained in document A/AC.105/781.
 - 2. Minimum essential elements of a safety framework.
 - 3. Design safety considerations for launch, normal operations and mission accidents.
- C. Pertinent to objective I.B
 - 1. Key issues in harmonizing International Atomic Energy Agency 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, including its sub-options, as contained in the annex to document A/AC.105/L.254/Rev.2.

Annex II

Committee on the Peaceful Uses of Outer Space/International Atomic Energy Agency joint technical workshop on a potential safety framework for nuclear power source applications in outer space, to be held in Vienna from 20 to 22 February 2006

Indicative schedule of work

<i>Date/activity</i>	<i>Chairperson/rapporteur/organizing entity</i>
Monday, 20 February 2006	
Registration at Gate 1, Vienna International Centre	
Opening session (Conference room I)	
Introduction and workshop protocol	Chairperson of the Working Group on the Use of Nuclear Power Sources in Outer Space (Sam Harbison)
Welcome statements (speaking notes to be provided to interpreters)	Chairperson of the Committee on the Peaceful Uses of Outer Space or of its Scientific and Technical Subcommittee (to be confirmed) Deputy Director-General, Department of Nuclear Safety and Security, International Atomic Energy Agency (IAEA) (to be confirmed)
Working Group on the Use of Nuclear Power Sources in Outer Space (NPS Working Group): review (full paper to be provided, with speaking notes giving a brief historical review since 1999/reminder of documents already produced/objectives and topics of the Workshop explained by reference to documents A/AC.105/L.253/Rev.2, A/AC.105/L.254/Rev.2 and A/AC.105/C.1/L.281)	Chairperson of the Working Group on the Use of Nuclear Power Sources in Outer Space (Sam Harbison)
<i>Session 1. Background</i>	Chairperson: Sam Harbison (United Kingdom of Great Britain and Northern Ireland) Rapporteurs: to be designated by the secretariats of the Office for Outer Space Affairs and IAEA (to be confirmed)

<i>Date/activity</i>	<i>Chairperson/rapporteur/organizing entity</i>
<p>Paper or presentation on current processes for the development of international standards for radiation protection and nuclear safety</p> <p>(speaking notes to be provided)</p> <p>(20-minute presentation, followed by a 10-minute discussion)</p>	IAEA
<p>Presentation on ongoing, planned and currently foreseeable nuclear power source (NPS) applications in outer space and their scope and rationale (including rationale for use of space nuclear power rather than other space power sources)</p> <p>(speaking notes to be provided)</p> <p>(20-minute presentation, followed by a 10-minute discussion)</p>	United States
<i>Afternoon</i>	
<p>Presentation on ongoing, planned and currently foreseeable NPS applications in outer space and their scope and rationale (including rationale for use of space nuclear power rather than other space power sources)</p> <p>(speaking notes to be provided)</p> <p>(20-minute presentation, followed by a 10-minute discussion)</p>	Russian Federation
<p>Paper or presentation on ongoing, planned and currently foreseeable NPS applications in outer space and their scope and rationale (including rationale for use of space nuclear power rather than other space power sources)</p> <p>(speaking notes to be provided)</p> <p>(20-minute presentation, followed by a 10-minute discussion)</p>	<p>To be confirmed</p> <p>(Intention to make presentations to be confirmed to secretariat of the Office for Outer Space Affairs by 15 September 2005)</p>
<i>Session 2. Background</i>	
<p>Paper or presentation on unique design considerations for NPS applications in outer space</p> <p>(to be based on previous experiences with NPS)</p>	<p>Chairperson: IAEA (to be confirmed)</p> <p>Rapporteurs: to be designated by the secretariats of the Office for Outer Space Affairs and IAEA (to be confirmed)</p> <p>United States</p>

<i>Date/activity</i>	<i>Chairperson/rapporteur/organizing entity</i>
Paper or presentation on unique design considerations for NPS applications in outer space (to be based on previous experiences with NPS)	Russian Federation
Papers or presentations on national perspectives on the development of NPS designs for space with respect to safety considerations (high-level design philosophies and their evolution driven by experience, technology and political/institutional developments (for example, high-altitude dispersion versus containment)) (speaking notes to be provided) (Two 15-minute presentations: one on radioisotope power sources, one on nuclear reactors)	United States
Paper or presentation on national perspectives on the development of NPS designs for space with respect to safety considerations (high-level design philosophies and their evolution driven by experience, technology and political/institutional developments (for example, high-altitude dispersion versus containment)) (speaking notes to be provided)	Russian Federation
Paper or presentation on perspectives on the development of NPS designs for space with respect to safety considerations (speaking notes to be provided)	To be confirmed (Intention to make presentations to be confirmed to secretariat of the Office for Outer Space Affairs by 15 September 2005)
Concluding discussion	
Tuesday, 21 February 2006	
<i>Session 3. Presentations pertinent to objective I.A</i>	Chairperson: Michel Lévy Rapporteurs: to be designated by the secretariats of the Office for Outer Space Affairs and IAEA (to be confirmed)

<i>Date/activity</i>	<i>Chairperson/rapporteur/organizing entity</i>
<p>Review of international documents and national processes potentially relevant to the peaceful uses of nuclear power sources in outer space (A/AC.105/781)</p> <p>(speaking notes to be provided)</p> <p>(20-minute presentation, followed by a 10-minute discussion)</p>	<p>Representative of NPS Working Group (possibly Sam Harbison or Jack Wheeler)</p>
<p>Papers or presentations on design safety considerations for launch, normal operations and mission accidents (covering specific design approaches to assure safety and mitigate risk given foreseeable conditions/environments)</p> <p>(speaking notes to be provided)</p> <p>(Two 15-minute presentations: one on radioisotope power sources, one on nuclear reactors)</p>	<p>United States</p>
<p>Paper or presentation on design safety considerations for launch, normal operations and mission accidents (covering specific design approaches to assure safety and mitigate risk given foreseeable conditions/environments)</p> <p>(speaking notes to be provided)</p> <p>Discussion</p>	<p>Russian Federation</p>
<p>Current NPS Working Group version of the objectives, scope and attributes of an international safety framework of goals and recommendations for planned and currently foreseeable NPS in outer space</p>	<p>NPS Working Group</p>
<p>Minimum essential elements of a safety framework</p>	<p>IAEA</p>
<p><i>Afternoon</i></p>	
<p><i>Session 4. Presentations pertinent to objective I.A (continued)</i></p>	<p>Chairperson: Conrado Varotto</p> <p>Rapporteurs: to be designated by the secretariats of the Office for Outer Space Affairs and IAEA (to be confirmed)</p>
<p>Minimum essential elements of a safety framework</p>	<p>United States</p>
<p>Minimum essential elements of a safety framework</p>	<p>Russian Federation</p>

<i>Date/activity</i>	<i>Chairperson/rapporteur/organizing entity</i>
Minimum essential elements of a safety framework	To be confirmed (Intention to make presentations to be confirmed to secretariat of the Office for Outer Space Affairs by 15 September 2005)
Concluding discussion	
Wednesday, 22 February 2006	
<i>Session 5. Presentations pertinent to objective I.B</i>	Chairperson: IAEA (to be confirmed) Rapporteurs: to be designated by the secretariats of the Office for Outer Space Affairs and IAEA (to be confirmed)
Paper on IAEA processes for preparation and adoption of safety standards (including reference to document A/AC.105/L.254/Rev.2, pp. 15-16) (speaking notes to be provided)	IAEA
Presentation on overview of implementation plan options 1 and 3, including its sub-options, as specified in document A/AC.105/L.254/Rev.2 (speaking notes to be provided)	NPS Working Group and IAEA Reed Wilcox (United States)
Key issues in harmonizing IAEA and Committee on the Peaceful Uses of Outer Space/Scientific and Technical Subcommittee processes for establishing an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable NPS in outer space	NPS Working Group and IAEA
Discussion	
<i>Afternoon</i>	
Panel discussion on workshop objectives (The findings of the discussions will serve as the basis for the report on the Workshop)	Sam Harbison (United Kingdom)
Closing remarks by the chairpersons of the Committee on the Peaceful Uses of Outer Space and its Scientific and Technical Subcommittee and the representative of IAEA (to be confirmed)	