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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

Revision of the Working Paper of the Chairman of the Working Group on Nuclear Power Sources in Outer Space, as contained in A/AC.105/C.1/L.278[1]

The attached document contains proposed amendments to the Working Paper of the Chairman of the Working Group on Nuclear Power Sources in Outer Space as contained in document A/AC.105/C.1/L.278. The proposed amendments are being submitted by the United States of America.

New text proposed is indicated in bold underline and text to be deleted has been struck through.

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[1] This document has not been formally edited.

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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

Working paper submitted by the Chairman of the Working Group

I. Introduction

1. At its fortieth session, in 2003, the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space adopted a work plan, for 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 (A/AC.105/804, annex III). The present report informs the Scientific and Technical Subcommittee of the progress that the Working Group on the Use of Nuclear Power Sources in Outer Space has made in carrying out the actions in its work plan and discusses the merits of holding a joint technical workshop with the International Atomic Energy Agency (IAEA) ~~in the third quarter of 2005~~**during the February 2006 Scientific and Technical Subcommittee meeting.** The implications of such a joint workshop for the remaining period of the current work plan are discussed and possible amendments to and an extension of the work plan are proposed.

II. Progress with the work plan in 2003 and 2004

2. The following table represents the status of the topics on the multi-year work plan:

Year	*Action*	*Status*
2003		
	(a) Adopt a schedule of work;	Completed.
	(b) Invite national and regional space agencies to present information to the Scientific and Technical Subcommittee in 2004 and 2005 on the content of relevant national (including bilateral or multilateral) space NPS programmes and applications planned or currently foreseeable;	Completed in 2004; continuing action was scheduled for 2005.
	(c) Invite national and regional space agencies to present information to the Scientific and Technical Subcommittee in 2004 on the space applications enabled or significantly enhanced by NPS;	Completed.

Year	*Action*	*Status*
	(d) Conduct preliminary discussions on objectives and attributes for an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable space NPS applications;	Completed: provided input for document A/AC.105/L.253.
	(e) Invite IAEA by June 2003 to define the specific processes and mechanisms (including their time frame, resources and administrative requirements) that the Agency could use to participate with the Subcommittee in developing space NPS technical safety standards;	Completed (see A/AC.105/C.1/L.271/Rev.1).
	(f) Request the Office for Outer Space Affairs and IAEA by September 2003 to jointly prepare possible organizational plans providing for: (i) potential co-sponsorship of an effort to develop an international space NPS technical standard; and (ii) potential IAEA advice to the Subcommittee in the preparation of such a standard.	Completed (see A/AC.105/C.1/L.268).
2004		
	(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;	Completed.
	(b) Review information from national and regional space agencies on the applications enabled or significantly enhanced by space NPS;	Completed.
	(c) Review IAEA-specific processes and mechanisms (including their time frame, resources and administrative requirements) that the Agency could use to participate with the Scientific and Technical Subcommittee in developing space NPS technical safety standards;	Review of document A/AC.105/C.1/L.271/Rev.1 has been carried out and consensus has been reached on the potential value of holding a joint workshop (see chap. III below).
	(d) Prepare a draft outline of the objectives, scope and attributes for an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable space NPS applications;	Completed (see A/AC.105/L.253).
	(e) Prepare a draft set of potential implementation options for establishing an international technically based framework of goals and recommendations for the	Completed (see A/AC.105/L.254).

Year	*Action*	*Status*
	safety of planned and currently foreseeable space NPS applications;	
	(f) If appropriate, make a preliminary decision on whether to recommend co-sponsorship with IAEA of a technical standard development effort starting in 2006.	The Working Group considers that the various options need to be explored further before a final recommendation can be made (see chaps. III and IV below).

III. Potential benefits of holding a joint workshop with the International Atomic Energy Agency

3. Formal and informal discussions within the Working Group on Nuclear Power Sources in Outer Space, and between the Working Group and representatives of IAEA, have led to the conclusion that further work on any of the potential options for cooperating with IAEA in developing NPS technical safety standards would be assisted significantly by holding a joint workshop, as proposed in the note by the Secretariat of 23 September 2003 (A/AC.105/C.1/L.268). The objective of such a joint workshop would be an exchange of views between the Working Group and IAEA on the objective, scope and general attributes of a potential safety framework for NPS. Such an exchange would improve mutual understanding of the respective roles and methods of working of IAEA and the Committee on the Peaceful Uses of Outer Space and assist in examining the main issues that would arise in carrying out such a joint exercise successfully.

4. For maximum benefit, the workshop would require careful planning and the commitment of significant resources, in particular from ~~the experts nominated by IAEA and~~ the members of the Working Group**, the IAEA member states and the OOSA and IAEA secretariats**. The timing of the workshop would need to be chosen carefully within the annual cycles of the meetings of IAEA and the Committee on the Peaceful Uses of Outer Space in order to allow **broad participation of** the appropriate experts to attend. ~~The number of participants would have to be kept quite small in order to foster meaningful, in-depth discussion and allow useful conclusions and recommendations to be generated. A total of about 20-25 participants is envisaged.~~ As neither the Office for Outer Space Affairs of the Secretariat nor IAEA could provide the funds for simultaneous interpretation, either the working language of the meeting would have to be English or participating member States would have to fund ~~their own~~ interpreters.

5. Allowance would also need to be made for the time and effort required after the joint meeting to digest the results of the meeting and make recommendations to the Scientific and Technical Subcommittee.

IV. Practical issues associated with holding a joint workshop

6. As stated above, the Working Group on Nuclear Power Sources in Outer Space and IAEA agreed on the potential benefits to both parties of holding a joint workshop. If the Scientific and Technical Subcommittee accepts the

recommendation of the Working Group to hold the joint workshop, the following timetable is envisaged:

Action	*Date*
Approval by the Scientific and Technical Subcommittee	February 2005
NPS Working Group reviews of progress and agreement on work activities or continuation of such activities by the Working Group on Nuclear Power Sources in Outer Space, including ~~A~~**a**greement on dates, venue, structure, potential participants, subjects and authors of papers, secretarial arrangements and so on with IAEA	**During the forty-eighth session of the Committee on the Peaceful Uses of Outer Space in June 2005**~~End of April 2005~~
Invitations and requests for papers sent out by the Office for Outer Space Affairs/IAEA secretariats	**Immediately following the forty-eighth session of the Committee on the Peaceful Uses of Outer Space in June 2005**~~Mid-May 2005~~
~~Reviews of progress and agreement on work activities or continuation of such activities by the Working Group on Nuclear Power Sources in Outer Space~~	~~During the forty-eighth session of the Committee on the Peaceful Uses of Outer Space in June 2005~~
Submission of papers to the Office for Outer Space Affairs; the option of translation into relevant languages will be considered at the detailed planning stage.	At least six weeks before the date of the workshop
Holding of the workshop	**During the forty-third session of the Committee on the Peaceful Uses of Outer Space in February 2006**~~Third quarter of 2005~~
Draft report on the workshop to be **prepared by members of the NPS Working Group along with representatives of the IAEA, and**	Immediately following ~~One month after~~ the workshop **but during the forty-third session of the Committee on the Peaceful Uses of Outer Space in February 2006**
Draft workshop report sent by the Office for Outer Space Affairs and IAEA to all participants for their comments and agreement	**One month after the forty-third session of the Committee on the Peaceful Uses of Outer Space in February 2006** ~~(depending on the dates of the workshop; this might be completed before the end of 2005)~~
Comments and any proposed additional material to be returned by participants to the Office for Outer Space Affairs and IAEA	Within ~~four~~ **eight** weeks of receipt of draft report
Updated ~~Finalization of the draft~~ **workshop** report **prepared by members of the NPS Working Group along with representatives of the IAEA** ~~and presentation of initial conclusions and recommendations to the Scientific and Technical Subcommittee~~	**During the forty-ninth session of the Committee on the Peaceful Uses of Outer Space in June 2006**~~During the forty-third session of the Scientific and Technical Subcommittee, in 2006~~

Action	*Date*
Draft NPS Working Group 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 draft joint technical workshop report.	**During the forty-ninth session of the Committee on the Peaceful Uses of Outers Space in June 2006.**
Incorporation of ~~final conclusions and recommendations~~**results from updated workshop report** into the Working Group's final report on the present plan of work (see chap. V below)	During the forty-fourth session of the Scientific and Technical Subcommittee, in 2007

V. Implications for the current work plan

7. The current work plan does not contain any specific allowance for the time and resources needed to organize and hold a joint workshop with IAEA. In order to accommodate this, it is suggested that the work plan should be amended as follows (proposed amendments are in italics):

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*** ~~*carry out*~~ *a joint technical workshop with* ***IAEA to be held during the forty-third session of the Committee on the Peaceful Uses of Outer Space in February 2006. . T*** ~~*t*~~*he* ***initial*** *proposed terms of reference for the workshop are set out in the annex to the present* ~~*documen*~~***document***.

(d) Hold an intersessional meeting during the forty-eighth meeting of the COPUOS in June 2005 to finalize the plans for the joint technical workshop with the IAEA to be held during the forty-third session of the Committee on the Peaceful Uses of Outer S ~~***t***~~***pace***.

2006

(a) ***Hold a joint technical workshop with the IAEA during the first two days of the forty-third session of the Committee on the Peaceful Uses of Outer Space; prepare a draft report of the joint technical workshop.***

(b) Hold informal consultations of the NPS Working Group during the forty-ninth session of COPUOS in June 2006 to ~~*P*~~*prepare an* ~~*agreed*~~ ***updated*** *report of*

the joint technical workshop for submission to the Scientific and Technical Subcommittee and IAEA;

(b) ***Hold informal consultations of the NPS Working Group during the forty-ninth session of COPUOS in June 2006 to*** ~~*Prepare*~~ ***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* ~~*conclusions and recommendations*~~***updated draft report*** *of the joint technical workshop with IAEA.*

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 this out.

VI. Conclusions and recommendations

Conclusions

8. The members of the Working Group on Nuclear Power Sources in Outer Space have concluded that further work on any of the potential options for cooperating with IAEA in developing NPS technical safety standards would be assisted significantly by holding a joint technical workshop. Members have also concluded that the earliest practicable time for holding such a joint workshop would be ~~the third quarter of~~**February** ~~2005~~**2006**. The success of such a workshop would depend on the members of the Working Group and the ~~experts nominated by IAEA, as well as the~~ Office for Outer Space Affairs and IAEA~~,~~ devoting a substantial amount of time and effort to the ~~project~~**planning for the workshop and garnering broad technical expertise for participation in the workshop**.

Recommendations

9. The members of the Working Group on Nuclear Power Sources in Outer Space recommend that the Scientific and Technical Subcommittee:

(a) Note the progress that has been made to date in achieving the work plan for the period 2003-2006;

(b) Approve the proposal for a joint technical workshop with IAEA and authorize the Working Group to proceed with its organization;

(c) Endorse the amended work plan set forth in chapter V above.

Annex

Proposed terms of reference for a joint technical workshop between the Working Group on Nuclear Power Sources in Outer Space and the International Atomic Energy Agency to discuss the scope and general attributes of a potential safety framework for nuclear power source applications in outer space

1. Objective

1. The objective of the proposed workshop would be an exchange of views between the Working Group on the Use of Nuclear Power Sources in Outer Space of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space and the International Atomic Energy Agency (IAEA) on the objective, scope and general attributes of a potential safety framework for nuclear power source applications in outer space.

2. Terms of reference

2. The workshop would:

(a) Briefly review relevant background information, such as:

(i) Report of the Working Group on a review of international documents and national processes potentially relevant to the peaceful uses of nuclear power sources in outer space (A/AC.105/781);

(ii) A working paper to be developed by IAEA on its processes and procedures for developing general safety standards and obtaining the endorsement of its member States;

(b) Consider working papers, one or more to be prepared by member States of the Committee on the Peaceful Uses of Outer Space on the unique features associated with the use of nuclear power sources in outer space applications that bear on potential safety standards, and one to be prepared by the IAEA experts on the scope and general attributes of a potential safety framework from the perspective of safety standard setters;

(c) Discuss the possible scope of a potential safety framework for nuclear power source applications in outer space;

(d) Discuss a set of potential attributes of a potential safety framework for nuclear power source applications in outer space, taking account of the note by the Secretariat of 15 March 2004 (A/AC.105/L.253);

~~(e) If appropriate, consider preliminary components of such a potential safety framework for nuclear power source applications in outer space;~~

(f) Prepare an agreed joint report of the technical workshop for submission to IAEA and the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space.

3. Duration

3. Provisionally, it is assumed that the technical workshop would last two days, though the actual duration (of either two or three days) would need to be determined at the detailed planning stage. During the first day, after the formal introductions, the background documents, IAEA working paper and member States' working papers would be presented. The papers would provide a basis for discussion of the potential scope, general attributes and components of a potential safety framework for nuclear power source applications in outer space.

4. On the second day, participants would continue their discussions in the morning. During the afternoon, they would draft the outline of an initial report to IAEA and the Scientific and Technical Subcommittee, presenting the consensus on the topics covered during the workshop.

4. Venue and date

5. The technical workshop could be organized by the Office for Outer Space Affairs of the Secretariat and IAEA in Vienna in the third quarter of 2005 and, if possible, immediately before or after a relevant IAEA meeting in order to facilitate attendance by IAEA experts.