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Strengthening the Agency's Activities Related to Nuclear Science, Technology and Applications

**Resolution adopted on 24 September 2004
during the tenth plenary meeting**

A.

Strengthening the Agency's Activities Related to Nuclear Science, Technology and Applications

The General Conference,

- (a) Noting that the Agency's objectives as outlined in Article II of the Statute include "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world",
- (b) Noting also that the statutory functions of the Agency as outlined in Article III of the Statute, paragraphs A.1 to A.4, include encouraging research and development and fostering the exchange of scientific and technical information and the training of scientists and experts in the field of peaceful uses of atomic energy, including the production of electric power, with due consideration for the needs of developing countries,
- (c) Noting the Medium Term Strategy as guidance and input in this respect,
- (d) Aware of the present role of nuclear power in meeting 16.0% of the electricity needs of mankind, and that a number of countries consider that applications of nuclear science are making a crucial input to development strategies in Member States,
- (e) Stating that nuclear science, technology and applications address and contribute to a wide variety of basic socio-economic human development needs of Member States, in such areas as energy, industry, food, nutrition and agriculture, human health and water resources management,
- (f) Confirming the important role of science, technology and engineering in enhancing nuclear safety and security,

(g) Acknowledging the need to resolve the issues of managing in a sustainable manner the waste from the nuclear fuel cycle, and

(h) Taking note of the “Nuclear Technology Review – 2004” (GC(48)/INF/4) prepared by the Secretariat,

1. Stresses the need, in conformity with the Statute, to continue to pursue activities of the Agency in the areas of nuclear science, technology and applications for meeting basic sustainable development needs of Member States;
2. Underlines the importance of facilitating effective programmes in the areas of nuclear science, technology and applications aimed at pooling and further improving the scientific and technological capabilities of Member States through coordinated research and development within the Agency and between the Agency and Member States and through direct assistance;
3. Recognizes the importance of and endorses the Agency activities which meet the objective of fostering sustainable development and protecting the environment;
4. Suggests that the Secretariat continue to implement efforts which contribute to a greater understanding and a well-balanced picture of the role of nuclear science and technology in a global, sustainable development perspective, including the Kyoto commitments;
5. Requests the Director General to continue to pursue, in consultation with Member States, the Agency’s activities in the areas of nuclear science, technology and applications, with special emphasis on supporting the development of power and non-power applications in Member States with a view to strengthening infrastructures and fostering science, technology and engineering with due regard to nuclear safety and nuclear security;
6. Calls upon the Secretariat to address specific needs and requirements of Member States, including those which do not have nuclear power facilities, in the areas of nuclear science, technology and applications, including the use of the sterile-insect technique (SIT) for creating tsetse-free zones and for combating malaria-transmitting mosquitoes, the use of isotopes and radiation in applications relating to agriculture, medicine, industry and the environment, and the treatment of greenhouse gases (GHGs) and flue gases resulting from fossil fuel burning;
7. Requests that the actions of the Secretariat called for above be undertaken subject to the availability of resources; and
8. Recommends that the Secretariat report to the Board of Governors and to the General Conference at its forty-ninth session on the progress made in the areas of nuclear science, technology and applications.

B.

Support to the African Union's Pan African Tsetse and Trypanosomosis Eradication Campaign (AU-PATTEC)

The General Conference,

- (a) Recalling its resolution GC(47)/RES/9 on “Strengthening of the Agency’s Technical Cooperation Activities” and its resolutions GC(46)/RES/11.D and GC(45)/RES/12.D on support

to the Organization of African Unity's (now African Union's) Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC),

(b) Recognizing that tsetse flies and the trypanosomosis disease they transmit are a major transboundary African problem and are one of the greatest constraints to the African continent's socio-economic development, affecting the health of humans and livestock, limiting land use, and causing increased poverty,

(c) Recognizing that this disease still claims ten of thousands of human lives and millions of livestock every year and threatens over 60 million people in 37 countries, most of which are Agency Member States, and the situation is getting worse,

(d) Recognizing the significant contribution of the Agency's programmes in addressing the objectives of the African Union's New Partnership for Africa's Development (NEPAD),

(e) Recalling decisions AHG/Dec.156(XXXVI) and AHG/Dec.169(XXXVII) of the Heads of State and Government of the then Organization of African Unity (OAU) to free Africa of tsetse flies and on a Plan of Action for implementing the campaign,

(f) Noting the steps taken by the Commission of the African Union to establish at its headquarters in Addis Ababa, Ethiopia, an office to act as the focal point for AU-PATTEC and to coordinate the implementation of the AU-PATTEC Plan of Action,

(g) Noting the progress being made by the Commission of the African Union to build partnerships for AU-PATTEC, including with funding organizations and other partners,

(h) Aware that SIT is a proven technique for the creation of tsetse-free zones when applied within an Area-wide Integrated Pest Management (AW-IPM) approach,

(i) Acknowledging the support given to AU-PATTEC by the Agency as outlined in the report by the Director General (in GOV/2003/53-GC(47)/11, Annex 5) to the 2003 session of the General Conference, and

(j) Appreciating the extrabudgetary contribution provided by a number of Member States in support of these efforts,

1. Appreciates the continued support of the Agency to Member States in their efforts to build capacity for applying SIT in creating tsetse-free zones in Africa;
2. Calls upon Member States to continue to provide technical, financial and material support to African States in their efforts to create tsetse free-zones;
3. Requests the Secretariat, in cooperation with Member States and international organizations, to continue to support R&D and technology transfer to African Member States in order to complement their efforts to create and subsequently expand tsetse-free zones within available resources;
4. Stresses the need for continued cooperation with the Commission of the African Union and other regional and international partners with the aim of harmonizing efforts in line with the AU-PATTEC Plan of Action; and
5. Requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its forty-ninth (2005) session.

C.

Development of the Sterile Insect Technique for the Control or Eradication of Malaria-Transmitting Mosquitoes

The General Conference,

- (a) Recalling its resolution GC(44)/RES/24 on “Servicing Immediate Human Needs”,
 - (b) Taking note of the declaration and Plan of Action agreed upon at the Roll-Back Malaria Summit of African Heads of State and Government in April 2000 in Abuja, Nigeria, to pursue a target to halve malaria mortality in Africa by 2010, and the recommendation for a Roll-Back Malaria global partnership,
 - (c) Taking note also of the joint efforts against malaria being implemented by the Andean Community,
 - (d) Appreciating the important role that nuclear applications play in addressing basic human needs,
 - (e) Conscious that the work done by the Agency in the field of nuclear sciences and applications in the non-power sector contributes to sustainable development, especially with programmes aimed at enhancing the quality of life in various ways, including improving human health,
 - (f) Recognizing the success of the sterile insect technique (SIT) in the eradication of the tsetse fly, the Mediterranean fruit fly and other insects of economic importance,
 - (g) Noting with concern that malaria, transmitted by mosquitoes, causes about two million deaths a year and about 300-500 million cases of clinical malaria annually,
 - (h) Noting with serious concern that over 90% of the world’s malaria cases occur in Africa, slowing down economic growth by 1.3% annually,
 - (i) Noting that the malaria parasite has continued to develop resistance to drugs and that mosquitoes too have continued to develop resistance to insecticides,
 - (j) Further noting that R&D on malaria-transmitting mosquitoes took off with the inauguration of the SIT–Malaria Facility in the Agency’s Laboratories in Seibersdorf on 26 June 2003, and
 - (k) Noting with appreciation the interest shown by some donors and their support for R&D on SIT for combating malaria-transmitting mosquitoes,
1. Requests the Agency to continue and strengthen, through the activities mentioned below, the research required to use SIT for the control and eradication of malaria-transmitting mosquitoes;
 2. Also requests the Agency to increasingly involve African and other developing Member States’ scientific and research institutes in the research programme in order to ensure their participation, leading to ownership by the affected countries;
 3. Further requests the Agency to increase its efforts to raise funds for the research programme;
 4. Invites the donors to continue with their financial support, and other Member States to make financial contributions to the research programme; and

5. Requests the Director General to report on the progress made in the implementation of this resolution at the 50th session of the General Conference.

D. Programme of Action for Cancer Therapy

The General Conference,

- (a) Recalling its resolution GC(45)/RES/12.C on ‘Servicing Immediate Human Needs’,
 - (b) Recognizing the suffering of cancer patients and their families and the extent to which cancer threatens development,
 - (c) Concerned by the increasing number of new cases of cancer, and cancer morbidity and mortality worldwide, particularly in developing countries,
 - (d) Recognizing that by using existing nuclear technology for diagnosis and treatment many cases of cancer may be cured, especially if detected early,
 - (e) Regretting that appropriate technologies, including cobalt radiotherapy, are not available for most cancer patients in developing countries,
 - (f) Noting the call of the World Health Organization (WHO) and the International Union Against Cancer (UICC) for action “through concerted efforts by all sectors to prevent and treat cancer throughout the world” and their challenge to “international organizations, intergovernmental institutions, and individuals from all sectors, public and private, to work together to reverse the trends by addressing common risk factors, providing recommended treatment, and planning effectively at national and regional levels”,
 - (g) Noting with appreciation the ongoing contributions by the Agency in the field of human health, in particular nuclear medicine, including cobalt radiotherapy services in developing countries,
 - (h) Welcoming the initiative by the Director General for developing a Programme of Action for Cancer Therapy (PACT) and the request by the Board of Governors on 16 June 2004 that the Director General pursue, further develop and implement, subject to the availability of resources, the elements of the Programme,
 - (i) Expressing its appreciation for the financial and other contributions made by Member States and others to the Programme, and
 - (j) Emphasizing the significance of the implementation of this important Programme in synergy and partnership with governmental, national, non-governmental and private-sector organizations, such as WHO, the International Agency for Research on Cancer (IARC), the International Union Against Cancer (UICC), the Alliance for Global Cancer Control, national health institutions, professional and patient associations,
1. Requests the Director General to strengthen the IAEA’s involvement in international partnerships with non-traditional donors and its collaboration with Member States and bodies of the United Nations system and regional organizations in order to advocate, build support and mobilize resources for the implementation of PACT, as one of the priorities of the Agency, with a view to

providing the required cancer diagnosis and radiotherapy services in developing countries, in the context of national cancer control strategies;

2. Invites Member States and all other interested organizations to contribute to the implementation of PACT; and
3. Requests the Director General to continue efforts to identify necessary resources and raise funds from extrabudgetary sources to implement PACT.

E. Nuclear Knowledge

The General Conference,

- (a) Recognizing that preserving and enhancing nuclear knowledge and ensuring the availability of qualified manpower are vital to all aspects of human activity related to the continued and expanded safe and secure utilization of all nuclear technologies for peaceful purposes,
 - (b) Recalling its resolutions GC(46)/RES/11.B and GC(47)/RES/10.B on nuclear knowledge,
 - (c) Noting the important role which the Agency plays in assisting Member States in their preservation and enhancement of nuclear knowledge and in facilitating international collaboration on this,
 - (d) Aware of concerns about a possible shortage of personnel in nuclear fields,
 - (e) Recognizing that preserving and enhancing nuclear knowledge involves both education and training for succession planning and the preservation or growth of existing knowledge in nuclear science and technology,
 - (f) Noting that the need to preserve, enhance or strengthen nuclear knowledge arises irrespectively of future expansion in the applications of nuclear technologies,
 - (g) Recognizing the useful role of international coordination and cooperation in facilitating exchanges of information and experience and in implementing actions to help address common problems, and also in benefiting from opportunities relating to education and training and to nuclear knowledge preservation and enhancement, and
 - (h) Welcoming the results of the International Conference on Nuclear Knowledge Management Strategies, Information Management and Human Resources Development held in Saclay, France, from 7 to 10 September 2004,
1. Commends the Director General and the Secretariat for their efforts in addressing issues of preservation and enhancement of nuclear knowledge in response to relevant General Conference resolutions and as described in document GC(48)/12;
 2. Urges the Secretariat to continue to strengthen, subject to the availability of resources, its current and planned efforts in this area, recognizing the need for a focused and consolidated approach, to consult with Member States and other international organizations, to take into account the results of relevant international meetings in the ongoing development of a comprehensive Agency strategy for all aspects of nuclear education, training and qualification, as well as nuclear knowledge preservation

and enhancement, and to further increase the level of awareness of its efforts in the preservation and enhancement of nuclear knowledge;

3. Requests the Secretariat to assist Member States, particularly developing ones, at their request in their efforts to ensure the preservation of nuclear education and training in all areas of nuclear technology for peaceful purposes, which is a necessary prerequisite for succession planning, and encourages Member States in a position to do so to provide the necessary assistance mentioned above;
4. Encourages Member States and international organizations to promote the networking of institutions for such nuclear education and training at the regional and the international level;
5. Requests the Director General to continue to evaluate the relevance of currently ongoing programmes and activities aimed at addressing common problems identified by Member States regarding the preservation and enhancement of nuclear knowledge and to identify approaches, including the development of a methodology, aimed at addressing those problems;
6. Requests the Director General to note the continuing high level of interest of Member States in the range of issues associated with nuclear knowledge in the process of preparing the Agency's programme; and
7. Requests the Director General to report on progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its fiftieth (2006) session under an appropriate agenda item, and thereafter to continue to update the report to the General Conference on a biennial basis.

F.

Agency Activities in the Development of Innovative Nuclear Technology

The General Conference.

- (a) Recalling the Agency's statutory functions "to encourage and assist research on, and development and practical application of, atomic energy for peaceful uses... and ... to foster the exchange of scientific and technical information",
- (b) Recalling also its resolutions GC(44)/RES/21, GC(45)/RES/12.F, GC(46)/RES/11.C and GC(47)/RES/10.C on the Agency's activities in the development of innovative nuclear technology,
- (c) Conscious of the need for sustainable development and of the potential contribution of nuclear energy to meeting the growing energy needs in the 21st century,
- (d) Taking note of the conference "Nuclear Energy and Science for the 21st Century: Atoms for Peace + 50" held in Washington D.C. on 22 October 2003, and of the International Conference on Fifty Years of Nuclear Power – the Next Fifty Years held in Moscow and Obninsk, Russian Federation, from 27 June to 2 July 2004,
- (e) Noting the progress achieved in a number of Member States in the development of innovative nuclear technology and the high technical and economic potential of international collaboration in the development of such technology,

(f) Recognizing the unique role which the IAEA can play, and in particular the current role it is playing through the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), by bringing together all interested Member States to consider jointly innovations in nuclear reactors and fuel cycle systems,

(g) Noting the progress of other bilateral and international initiatives, such as the Generation IV International Forum, and their contribution to developing innovative approaches to nuclear power, and

(h) Noting with appreciation the Director General's report on the development of innovative nuclear technology contained in document GC(48)/14,

1. Commends the Director General and the Secretariat for their work in response to the relevant General Conference resolutions, in particular the results achieved to date within INPRO;
2. Emphasizes the important role that the Agency can play in assisting Member States in the application of the INPRO methodology for the assessment of safety, proliferation resistance, sustainability, environmental, infrastructure and economics aspects of innovative reactors and fuel cycles;
3. Invites all interested Member States to combine their efforts under the aegis of the Agency in considering the issues of nuclear reactors and fuel cycles, in particular by examining innovative, safe, proliferation-resistant and economically competitive nuclear technology;
4. Recognizing that the funding of INPRO comes partly from the Regular Budget and in large part from extrabudgetary resources, requests the Director General to strengthen the Agency's efforts related to the development of innovative technology, subject to available resources;
5. Stresses the need for international collaboration for the development of innovative nuclear technology and the high potential and added value achieved through such collaborative efforts, as well as the importance of taking advantage of synergies between international activities on innovative nuclear technology development;
6. Invites all interested Member States to contribute to innovative nuclear technology activities in terms of scientific and technical information, financial support or technical and other relevant experts and by performing joint innovative nuclear energy systems assessments; and
7. Requests the Director General to report on the progress made in the implementation of this resolution to the Board of Governors and to the General Conference at its forty-ninth session under an appropriate agenda item.