

# General Conference

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Item 17 of the agenda  
(GC(50)/21)

# Strengthening the Agency's activities related to nuclear science, technology and applications

**Resolution adopted on 22 September 2006 during the ninth plenary meeting**

## **A.**

### **Non-power nuclear applications**

#### **1.**

#### **General**

#### 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, with due consideration for the needs of developing countries,
- (c) Noting the Agency's Medium Term Strategy 2006-2011 as guidance and input in this respect,
- (d) Stressing 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, materials, industry, food, nutrition and agriculture, human health and water resources,
- (e) Recognizing the success of the sterile insect technique (SIT) in the suppression or eradication of the screw-worm, the tsetse fly, and various fruit flies and moths that can cause large economic impacts,

- (f) Noting the perpetual serious problem of locusts in Africa, especially in areas highly prone to environmental degradation and desertification, and has been responsible for severe famine in certain countries,
- (g) Noting also that a regional conference on approaches for the integrated combating of locusts held in Algiers (Algeria) from 23 to 24 July 2006, with the participation of many African countries and of representative from FAO and the IAEA, recommended the integration of nuclear applications in combating of locusts as a component of a cooperative and an integrated approach and called for the establishment of a regional centre for studies and training in this field,
- (h) Confirming the important role of science, technology and engineering in enhancing nuclear safety and security,
- (i) Acknowledging the need to resolve the issues of managing radioactive waste in a sustainable manner,
- (j) Acknowledging that the peaceful use of fusion energy can be advanced through increased international efforts and with the active collaboration of interested Member States and organizations in fusion-related projects,
- (k) Welcoming the 21st IAEA Fusion Energy Conference to be held at Chengdu, People's Republic of China, from 16 to 21 October 2006 and the 22nd IAEA Fusion Energy Conference "Fifty Years of Fusion" to be held in October 2008 in Geneva, Switzerland, and encouraging Member States to participate in these significant events,
- (l) Taking note of the "Nuclear Technology Review 2006" (GC(50)/INF/3) prepared by the Secretariat,
- (m) Aware of the problem of pollutants arising from urban and industrial activities and the potential of radiation treatment to address some of them,
- (n) Recognising the increasing use of radioisotopes and radiation techniques in healthcare practices, crop improvement, food preservation, industrial process management, new materials development and analytical sciences,
- (o) Aware that strengthening support to capacity-building in developing Member States in emerging areas of nuclear techniques is important for the accrual of benefits from nuclear applications,
- (p) Noting the expanding use of positron emission tomography (PET) and hospital-prepared radiopharmaceuticals,
- (q) Acknowledging the increased capacity of Member States in using nuclear techniques in disease management and aware of the need for developing performance indicators for measuring such capacity,
- (r) Noting with concern that, due to high costs related to nuclear medicine, the full deployment of up-to-date techniques has been hampered, and
- (s) Noting that the Agency has embarked on an effort to compile and disseminate isotope data on aquifers and rivers worldwide aimed at assisting decision-makers in adopting better practices for groundwater management,

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 Agency activities that meet the objective of fostering sustainable development and protecting the environment;
4. Urges the Secretariat to continue implementing effort which contribute to greater understanding and a well-balanced perspective of the role of nuclear science and technology in sustainable global development, 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 nuclear 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 SIT to establish tsetse-free zones and for combating malaria-transmitting mosquitoes and the Mediterranean fruit fly, the use of isotopes and radiation in groundwater management and applications relating to agriculture such as crop improvement, human health, including additional concerted efforts through PACT and in the use of cyclotrons for the production and quality control of PET radiopharmaceuticals, novel materials development, industry and the protection of the environment, including the treatment of greenhouse gases (GHGs) and flue gases resulting from fossil fuel burning;
7. Requests the Agency to initiate, in collaboration with FAO and Member States, R&D on the possible use of nuclear techniques as a component of an integrated approach for combating locusts and to provide appropriate assistance to this end;
8. Requests also that the actions of the Secretariat called for in this resolution be undertaken subject to the availability of resources; and
9. Recommends that the Secretariat report to the Board of Governors and to the General Conference at its fifty-first session on the progress made in the areas of nuclear science, technology and applications.

## 2.

### **Programme of Action for Cancer Therapy**

#### The General Conference,

- (a) Recalling its resolution GC(49)/RES/12.C on the Programme of Action for Cancer Therapy (PACT),
- (b) Concerned about the suffering of cancer patients and their families, the extent to which cancer threatens development, particularly in developing countries, and that the number of new cases could reach 16 million by 2020 unless the international community acts, and concerned also

that 12.5% of all deaths worldwide are caused by cancer as reported by the World Health Organization,

(c) Aware that PACT embodies in a clear way the peaceful use of nuclear technology for civilian and humanitarian purposes, and that the timely implementation of PACT, enabling Member States to develop capacities to fight cancer in a comprehensive way, will impact the health and development of all regions, and promote the other statutory activities of the Agency, and

(d) Noting the Agency's policy of seeking to develop an Agency-wide strategy for the implementation of PACT, and taking note of the Director General's report GOV/2006/25/Rev.1 on funding PACT in 2006 and 2007,

1. Welcomes the decision of the Board of Governors on 25 November 2005 to approve the Director General's proposal that the Agency's share of the Nobel Peace Prize for 2005 be used for human resource development in developing regions of the world in the areas of cancer management and nutrition;
2. Welcomes the establishment in December 2005 of the PACT Programme Office (PPO) as part of the Department of Nuclear Sciences and Applications to coordinate a single unified programme for fundraising and the delivery of projects to Member States for cancer-related activities, making use – inter alia – of available Agency information, of identified resources, and of synergies and interactions cross all relevant departments, as well as raising funds from extrabudgetary sources;
3. Commends the PPO for the progress made in the establishment of public-private partnerships with Member States, other international organizations and private entities, taking into consideration UNGA resolutions 58/129 (2003), 59/250 (2004) and 60/215 of 29 March 2006, and requests the Director General to continue to advocate, build support, and allocate and mobilize resources for the implementation of PACT as one of the priorities of the Agency;
4. Takes note of World Health Assembly resolution 58.22 on Cancer Prevention and Control;
5. Welcomes the number of imPACT missions conducted in Member States, further welcomes the plan to establish Model Demonstration Sites in countries which have developed national plans, and in this regard notes the intention of the Secretariat to establish Networks for Regional Cancer Training in each region;
6. Expresses appreciation for the financial and other contributions and pledges made by Member States and others to PACT, and encourages Member States to show more flexibility in the use of such contributions;
7. Encourages the PPO to enter into public-private partnerships at the country, the regional and the global level in order to accelerate expansion and widespread access to sustainable cancer therapy services in low and middle income countries;
8. Notes with interest the Secretariat's intention that PACT is to be part of the Human Health programme under Major Programme 2 in 2008–2009 and beyond and that Regular Budget funding will be sought for staff salaries and essential support;
9. Urges the Director General to seek and strengthen the Agency's involvement in international partnerships with non-traditional donors to further pursue, develop and implement PACT, and in this regard, requests the Director General to continue formalizing, where feasible and appropriate, PACT's

collaboration with partners already identified for the benefit of more effective development and implementation of country-level PACT projects;

10. Encourages the Director General to continue the consultations with the Director General of WHO on the feasibility of a joint programme of the Agency and WHO for cancer prevention, control, treatment and research as well as the best means to partner in the implementation of PACT;

11. Recommends that, at an early stage, the PPO, in consultation with relevant Agency departments and WHO, as appropriate, continue to develop tools to assist developing Member States in establishing national plans and strengthening their capabilities to enhance the benefits to be achieved from the implementation of PACT;

12. Invites Member States, interested organizations, private donors, and other non-traditional donors to contribute to the implementation of PACT and requests the Secretariat to keep Member States informed about its efforts in this regard; and

13. Requests the Director General to report on the implementation of this resolution at its fifty-first regular session in 2007.

### 3.

#### **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” and its resolution GC(48)/RES/13.C on “Development of the Sterile Insect Technique for the Control or Eradication of Malaria-Transmitting Mosquitoes”,

(b) Taking note of the declaration of the Special Summit of the African Union on HIV/AIDS, Tuberculosis, and Malaria held in May 2006 in Abuja, Nigeria, that the dual challenges of poverty and lack of human resources have led to slow progress that has not met the expectations of the 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 recommendations 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 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, and thus constitutes a major obstacle to poverty eradication in Africa,
- (i) Noting that the malaria parasite has continued to develop resistance to drugs and that mosquitoes too have continued to develop resistance to insecticides, and that it is envisaged that SIT would be used under specific conditions as an adjunct to more orthodox technologies, conforming to the WHO's roll-back strategy of not relying on any single approach to control and eradication of malaria,
- (j) Welcoming the fact that R&D on malaria-transmitting mosquitoes, which commenced with the inauguration of the SIT-Malaria Facility in the Agency's Laboratories in Seibersdorf on 26 June 2003, intensified during 2004-2005,
- (k) Noting with appreciation the interest shown by some donors and their support for R&D on SIT for combating malaria-transmitting mosquitoes, and
- (l) Acknowledging with appreciation the support given by the Agency to development of the SIT for the control and eradication of malaria-transmitting mosquitoes as outlined in the report by the Director General in document GC(50)/14, Annex 1,
1. Requests the Agency to continue and strengthen, through the activities mentioned above, the research, both in the laboratory and in the field, 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 to the general Conference at its fifty-second session (2008).

#### **4.**

#### **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 (45)/RES/12.D, GC (46)/RES/11.D, GC (48)/RES/13.B and GC (49)/RES/12.D on support to the African Union's Pan African Tsetse and Trypanosomosis Eradication Campaign (AU-PATTEC),
- (b) Recognizing that tsetse flies and the trypanosomosis disease which they transmit are a major transboundary African challenge and constitute one of the greatest constraints on the African continent's socio-economic development, affecting the health of humans and livestock, limiting land use and thus causing increased poverty,

- (c) Recognizing that this disease continues to claim tens 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 that the situation continues to worsen,
  - (d) Recognizing the significant contribution by the Agency's programmes in addressing the objectives of the African Union's New Partnership for Africa's Development (NEPAD) and the Millennium Development Goals (MDGs),
  - (e) Recalling decisions AHG/Dec.156 (XXXVI) and AHG/Dec.169 (XXXVII) of the Heads of State and Government of the then Organization for African Unity (now African Union) to free Africa of tsetse flies and on a plan of action for implementing PATTEC,
  - (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 in building partnerships for AU-PATTEC, including with the African Development Bank (ADB) and other funding organizations and partners,
  - (h) Cognisant 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, and
  - (i) Acknowledging the continued support given to AU-PATTEC by the Agency as outlined in the report submitted by the Director General in document GC (50)/14, Annex 2,
1. Appreciates the continuous support of the Agency to Member States in their efforts to build capacity and further develop the techniques for applying the SIT in creating tsetse-free zones in Africa, and also appreciates the contributions provided by some Member States and United Nations specialized agencies in support of these efforts;
  2. Calls upon Member States to strengthen the provision of 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;
  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 fifty-first (2007) regular session.

## **B.**

### **Nuclear power applications**

#### The General Conference,

- (a) Recalling resolution GC(49)/RES/12 and previous General Conference resolutions on strengthening the Agency's activities related to nuclear science, technology and applications,

- (b) 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",
- (c) Noting also that the Agency's statutory functions include "to encourage and assist research on, and practical application of, atomic energy for peaceful uses", "to foster the exchange of scientific and technical information", and "to encourage the exchange and 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,
- (d) Stressing that the availability of energy and access to it are vital to human development,
- (e) Recognizing that the health of the planet's environment, including action to reduce air pollution and address the risk of global climate change, is a serious concern that must be regarded as a priority by all governments, and noting that nuclear power generation does not produce air pollution or greenhouse gas emissions during normal operation,
- (f) Recognizing the safety and security issues associated with nuclear energy, as well as the need to resolve the issues of managing radioactive waste in a sustainable manner, while also recognizing continuing international efforts to address those issues,
- (g) Recognizing that a diverse portfolio of energy sources will be needed in the 21<sup>st</sup> century to allow access to sustainable energy and electricity resources in all regions of the world, and that Member States pursue different ways to achieve energy security and climate protection goals,
- (h) Acknowledging that each State has a right to define its national energy policy in accordance with its national requirements and its relevant international obligations,
- (i) Recalling the final statement of the President of the Paris International Ministerial Conference on "Nuclear Power for the 21st Century", organized by the Agency in March 2005, where a wide range of views were expressed and where a vast majority of participants affirmed that nuclear power can make a major contribution to meeting energy needs and sustaining the world's development in the 21st century, for a large number of both developed and developing countries,
- (j) Aware of the present role of nuclear power in providing 16 % of world electricity supply, and that a number of countries that have or are considering plans for nuclear energy believe it will make a crucial input to their sustainable development strategies and contribute to global energy security while reducing air pollution and addressing climate change, while others hold different views based on their assessments of benefits and risks,
- (k) Stressing in that regard the role and contribution of various nuclear power, fuel cycle and waste technology programmes, including furthering understanding of future global nuclear scenarios, in promoting international cooperation on nuclear power, and noting various initiatives,
- (l) Confirming that the use of nuclear power must be accompanied by commitments to and ongoing implementation of effective levels of safety, security and safeguards, consistent with States' national legislation and respective international obligations,
- (m) Noting the numerous requests received from Member States planning to introduce nuclear power generation, for assistance in conducting energy studies to evaluate future energy options and in establishing appropriate technical, human, legal and administrative infrastructure, and acknowledging the importance of the Agency's support in this regard,

- (n) Taking note of the improved performance record of nuclear power plants globally, and recognizing the essential role which the Agency plays, as the principal international forum for the exchange of information and experience on nuclear power plant operation, for their continual improvement among Member States and international organizations such as the OECD/NEA and NGOs such as WANO,
- (o) Confirming the important role of science and technology in addressing the continuing challenges of nuclear safety, security and non-proliferation, and in the management of nuclear waste,
- (p) Taking note of the “Nuclear Technology Review 2006” (GC(50)/INF/3) prepared by the Secretariat, and
- (q) Emphasizing the increasing importance of web-based systems for the exchange of and the access to nuclear safety information and knowledge for the general public as well as for dedicated experts,
1. Affirms the importance of the role of the Agency in facilitating through international cooperation among interested Member States the development and use of nuclear energy for peaceful purposes, including the specific application of the generation of electric power, in assisting these States in that regard, in fostering international cooperation and in disseminating to the public well balanced information on nuclear energy;
  2. Underlines the importance of facilitating effective programmes in the areas of nuclear science, technology and applications related to nuclear power, aimed at pooling and further improving the scientific and technological capabilities of interested Member States through cooperation and coordinated research and development within the Agency, and between the Agency and interested Member States;
  3. Recognizes the importance of and endorses the Agency activities that meet the objective of fostering sustainable development and protecting the environment;
  4. Recommends that the Secretariat continue to implement efforts that contribute to a greater understanding and a well balanced picture of the role of nuclear science and technology in a global, sustainable development perspective;
  5. Stresses the importance, when developing nuclear energy, including nuclear power and related fuel cycle activities, of ensuring safety, security, non-proliferation and environmental protection,
  6. Requests the Secretariat to continue to pursue, subject to the availability of resources and in consultation with interested Member States, the Agency’s activities in the areas of nuclear science and technology for nuclear power applications in Member States, with a view to strengthening infrastructures and fostering science, technology and engineering;
  7. Requests in particular the Secretariat to continue and strengthen, subject to the availability of resources, its efforts relating to nuclear power, fuel cycle and waste technology, focusing particularly on technical areas where the needs for improvement, advances and enhanced international collaboration are greatest;
  8. Requests the Secretariat to organize, subject to the availability of resources, a high-level international conference on the global nuclear energy status and future developments, with particular focus on nuclear power;

9. Requests the Director General to report to the 51<sup>st</sup> session of the General Conference on innovative means of financing nuclear power as an option in meeting the energy needs of interested developing countries;
10. Requests also the Secretariat to provide, on a biennial basis, a comprehensive report on international status and prospects of nuclear power, beginning in 2008; and
11. Recommends that the Secretariat report to the Board of Governors and to the General Conference at its fifty-first session on developments relevant to this resolution.

**1.**

**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, GC(47)/RES/10.C, GC(48)/RES/13.F and GC(49)/RES/12.F 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 power to meeting the growing energy needs in the 21st century,
- (d) Noting the statement of the G-8 Summit held in St. Petersburg, Russian Federation, in 2006 that those G-8 countries which have, or are considering the development of, innovative nuclear power systems recognized that these systems constitute an important element for efficient and safe nuclear energy development, acknowledging the efforts made in the complementary frameworks of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) and the Generation IV International Forum,
- (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 Agency plays, and in particular the current role it is playing through INPRO, by bringing together all interested Member States to consider jointly innovations in nuclear reactors and fuel cycle systems,
- (g) Noting that 26 Member States and the European Commission are now members of INPRO, with Belarus, Japan, Slovakia and the United States having joined since the 2005 session of the General Conference,
- (h) Recognizing the progress achieved by the INPRO Member States in the joint assessment of innovative nuclear power systems, the identified interest in the possible options of collaborative projects for innovative systems development and their decision to start Phase 2 of INPRO,
- (i) 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
- (j) Noting with appreciation the Director General's report on the development of innovative nuclear technology contained in document GC(50)/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 interested Member States with the planning and development of their nuclear infrastructures through the application of the INPRO methodology for the assessment of safety, proliferation resistance, sustainability, environmental, infrastructural and economic aspects of innovative reactors and fuel cycles, and with the selection and implementation of efficient strategies for dealing, in line with their development needs, with the 21st century energy challenges in ways that meet national objectives while contributing to the balanced development of the global energy system;
3. Invites all interested Member States to combine their efforts under the aegis of the Agency in the activities of INPRO Phase 2 in considering the issues of innovative nuclear reactors and fuel cycles systems, institutional capacity, infrastructure development, and the mobilization of unconventional financial resources, in particular by continuing assessment studies of such systems and their role in the national, regional and global scenarios for further use of nuclear energy, as well as identifying common issues for possible collaborative projects, including CRPs and joint initiatives, and methods for their joint implementation;
4. Encourages interested Member States, by the concerted efforts of developed and developing countries, jointly to consider how to meet their energy needs and contribute to economic development, inter alia, by developing and deploying innovative nuclear power systems, taking into account the possible role of the recent initiatives aimed at the further development of the peaceful use of nuclear energy in a manner consistent with non-proliferation commitments;
5. Calls on interested Member States to develop, under the auspices of the Agency, nuclear power reactors reflecting the needs of the developing States that choose the nuclear option, and in this regard
  - (a) Encourages the development of small and medium nuclear power reactors that meet grid sizes and economic requirements of developing countries, have very long-lifetime cores, are easily safeguardable, are protected robustly against attempts at sabotage or theft, avoid the use of fissile materials suitable for use in a nuclear weapon or other nuclear explosive device and are safe against accidents that may produce catastrophic consequences;
  - (b) Stresses the need to establish, in line with national circumstances, common user criteria for such nuclear power reactors, including infrastructure development requirements, domestic legal and regulatory frameworks, provisions for removal and disposal of the spent fuel, and flexible financing arrangements;
  - (c) Recommends that INPRO, subject to the availability of resources, refine such common user criteria in a timely manner;
6. Calls on the Secretariat and Member States in a position to do so to investigate the availability of new, more proliferation-resistant technologies for the recycling of spent fuel and its use in advanced reactors under appropriate controls and for the long-term disposition of remaining waste materials;
7. 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;
8. Stresses the need for international collaboration for the development of innovative nuclear technology, including enabling technologies, 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;

9. Invites all interested Member States to contribute to innovative nuclear technology activities in terms of scientific and technical information, financial support or the support of technical and other relevant experts and by performing joint innovative nuclear power system collaborative projects; and

10. Requests the Director General to report on the progress made in the implementation of this resolution, including the INPRO conclusions on the refining of common user criteria as recommended in paragraph 5(c) above, to the Board of Governors and to the General Conference at its fifty-first session under an appropriate agenda item.

## 2.

### **Approaches to supporting nuclear power infrastructure development**

#### The General Conference,

- (a) Recognizing that the development and implementation of an appropriate infrastructure to support the successful introduction of nuclear power and its safe and efficient use is an issue of central concern, especially for countries that are considering and planning for the introduction of nuclear power,
  - (b) Recalling its resolution GC(49)/RES/12.G on approaches to supporting nuclear power infrastructure development,
  - (c) Acknowledging the Agency's role in assisting Member States that are considering and planning for the introduction of nuclear power with assessments of infrastructure needs, taking into account relevant economic, social and policy considerations, to support the safe, secure and efficient use of nuclear power,
  - (d) Acknowledging that the development of innovative nuclear energy technologies offers promising possibilities for lessening the infrastructure requirements through innovative approaches to infrastructure needs, which may be possible thanks to the innovative aspects of future nuclear energy technologies, and acknowledging that such innovative approaches to infrastructure needs may also apply to supporting the safe, secure and efficient use of existing nuclear power technologies, and
  - (e) Recognizing that the issue of infrastructure requirements for innovative nuclear energy technologies is an important topic within the Agency's International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO),
1. Commends the Director General and the Secretariat for their efforts in implementing resolution GC(49)/RES/12.G as reported in document GC(50)/14, in particular the publication of IAEA-TECDOC-1513, which provides initial guidance on the infrastructure that a country needs to develop;
  2. Welcomes the planned December 2006 workshop to provide information on the infrastructure issues to be addressed during the planning phase of the introduction of nuclear power.
  3. Encourages the Agency, within the framework of its existing programmes and drawing on its work on innovative nuclear technologies and its existing programmes for promoting effective and sustainable national regulatory infrastructures, to continue to undertake generic assessments on approaches and options for addressing infrastructure requirements so as to support the introduction of nuclear energy technologies and their safe, secure and efficient use, for those countries that are considering or planning for the introduction of nuclear energy technologies in the 21st century;

4. Invites all Member States that are interested in developing and applying current and innovative nuclear energy systems, and especially developing Member States that are interested in considering or planning for the introduction of nuclear energy technologies, to contribute, as appropriate, to such assessments by providing information enabling the Agency to apply its full spectrum of tools in support of the infrastructure development;
5. Encourages the Agency to take the results of its assessments of infrastructure requirements into account as part of the Agency's ongoing programme and activities regarding nuclear power; and
6. 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 52nd session under an appropriate agenda item.

## **C. 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(48)/RES/13.E, GC(47)/RES/10.B and GC(46)/RES/11.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 and about a possible erosion of the nuclear knowledge base,
  - (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, and
  - (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,
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(50)/14, including the adoption by the Agency of an Agency-wide approach and strategy for nuclear knowledge management;
  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, and in particular it:

- (a) Requests the Secretariat to assist Member States, particularly developing ones, at their request and subject to the availability of resources, 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, in particular through the networking of nuclear education and training, including activities of the World Nuclear University and the Asian Network for Education in Nuclear Technology, encourages Member States in a position to do so to participate in and support such networking, and underlines the importance of the technical cooperation programme in that context;
  - (b) Requests the Secretariat to further develop, in consultation with Member States, guidance and methodologies for planning, designing and implementing nuclear knowledge management programmes, including programmes for preserving knowledge and sustaining education and training, and to disseminate that guidance through expert missions, publications and workshops in Member States;
  - (c) Requests the Secretariat to continue to enhance and make available to Member States nuclear information and knowledge resources on the peaceful use of nuclear energy, including the International Nuclear Information System (INIS) and the IAEA Library; and
  - (d) Requests the Secretariat to continue to develop tools and methods to capture, share and preserve nuclear knowledge, considering also the increasing importance of information and knowledge available through the Internet;
3. Emphasizes the importance of the planned International Conference on Knowledge Management in Nuclear Facilities in 2007 and invites Member States to contribute to the conference;
  4. 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
  5. 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 52nd session under an appropriate agenda item.