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### RECORD OF THE NINTH PLENARY MEETING

Held at the Austria Center Vienna  
on Friday, 21 September 2001, at 11.30 a.m.

President: Mr. GRÖNBERG (Finland)

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[\*] GC(45)/28.

The composition of delegations attending the session is given in document GC(45)/INF/17/Rev.2.

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Abbreviations used in this record

Agreed Framework	Agreed Framework between the United States of America and the Democratic People's Republic of Korea
DPRK	Democratic People's Republic of Korea
KEDO	Korean Peninsula Energy Development Organization
NPT	Treaty on the Non-Proliferation of Nuclear Weapons

## REPORT OF THE SCIENTIFIC FORUM

1. The PRESIDENT invited the Rapporteur, Mr. Kabayo, to present the report of the Scientific Forum.
2. Mr. Kabayo presented the report which is reproduced in the Annex.
3. The PRESIDENT thanked Mr. Kabayo for his most interesting report and the Secretariat for their excellent preparation of the Scientific Forum
4. Mr. BUTT (Pakistan) said that his delegation had been looking forward to the 2001 Scientific Forum in view of the relevance of its theme to the developing countries. He commended the Secretariat and the Department of Technical Co-operation for organizing such a high-level scientific debate, which he felt had been the best since the inception of the Scientific Forum.
5. Mr. ARAMRATTANA (Thailand) congratulated the Secretariat and the Department of Technical Co-operation on the theme they had chosen for the Scientific Forum and the successful outcome thereof. The Forum had addressed key development issues. The Secretariat should continue to organize such events in future, and should consider organizing a similar scientific forum at regional level.

## IMPLEMENTATION OF THE NPT SAFEGUARDS AGREEMENT BETWEEN THE AGENCY AND THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA (GC(45)/26, GC(45)/L.3/Rev.1 and Add.1 and 2)

6. Mr. MORGAN (Canada), introducing the draft resolution contained in document GC(45)/L.3/Rev.1, said that the resolution urged the DPRK to comply fully with its safeguards agreement with the Agency, and to respond positively and promptly to the proposal put forward by the Agency at the technical discussions held in May 2001 for the verification of the correctness and completeness of the DPRK's initial declaration. Despite the overall lack of progress, there had been some encouraging developments both in the broader context of the region, and with regard to the participation by the DPRK in recent Agency events. That pointed to a constructive, albeit slow move in the right direction, giving reason to hope that the DPRK would comply with its obligations under its safeguards agreement in the near future.
7. Mr. KVOK (Russian Federation) said that the draft resolution under discussion differed considerably from that adopted by the forty-fourth regular session of the General Conference. Despite references to positive developments in the preambular paragraphs, it was on the whole harsher in tone.
8. Moreover, preambular paragraph (i) and operative paragraph 6 referred to the Agency's detailed proposal for the first concrete steps needed for the implementation of the generic requirements for the verification of the correctness and completeness of the DPRK's initial declaration. That proposal had not been officially circulated to Member States, or at least not

to the Russian Federation. When drafting such resolutions, a more objective assessment of existing agreements was required. If the resolution was put to the vote, the Russian Federation would abstain; it would not, however, block its adoption by consensus.

9. Mr. ZHANG Yishan (China) said that he looked forward to the resolution of the DPRK problem as soon as possible. Denuclearization and the restoration of peace and stability in the region were clearly in the common good. The main obstacle to finding a solution was the inconsistent policy of one Member State towards the DPRK. The basic conditions required for improvement of the political situation on the Korean Peninsula, the establishment of KEDO, and the implementation of the Agreed Framework were already in place. In order not to lose momentum, he encouraged all parties concerned to pursue their efforts in a spirit of dialogue and co-operation and, above all, to comply strictly with the Agreed Framework.

10. Mr Sang-duk CHOI (Republic of Korea) said that, despite the Agency's strenuous efforts of recent years, no progress had been made with the implementation of the DPRK's safeguards agreement. That situation posed a major challenge to the safeguards system and to the global nuclear non-proliferation regime. His country therefore welcomed the Agency's latest proposal regarding verification of the correctness and completeness of the DPRK's initial declaration. Since that process was likely to take three to four years, he urged the DPRK to respond positively and promptly to it so that work could begin without delay.

11. The Agreed Framework had played an important role in containing the DPRK's nuclear programme, and his Government had made every effort to meet its commitments to KEDO activities. It would continue to involve itself closely in the building of light-water reactors in the DPRK, for which the construction work was proceeding on schedule. It was to be hoped that the recent positive developments in the region would pave the way for full implementation of the relevant agreements. The draft resolution reflected that hope, and the concerns expressed by the Director General and the Board of Governors. He therefore proposed it be adopted without a vote.

12. The PRESIDENT said he took it that the General Conference wished to adopt the draft resolution contained in document GC(45)/L.3/Rev.1.

13. It was so decided.

14. Mr. ZHANG Yishan (China), said that the Chinese Government's position vis-à-vis the problem in the DPRK remained unchanged: it was in favour of the denuclearization of the Korean Peninsula and the maintenance of peace and stability there. The problem should be solved through constructive dialogue and co-operation between the parties concerned, and through strict observance of the relevant agreements. If the resolution had been put to the vote, his delegation would have abstained.

15. Mr. WULF (United States of America) said that his Government supported the Agency's efforts to implement safeguards in the DPRK and to monitor the freeze on the latter's nuclear facilities pursuant to the Agreed Framework. The Agreed Framework had

provided an additional basis for monitoring of the DPRK's known nuclear programme, and the continuous presence of IAEA inspectors in the DPRK was essential to preserve its credibility. Implementation of the Agreed Framework was proceeding on all fronts in co-operation with KEDO partners. Excavation of the power block for the light-water reactor project was scheduled to begin shortly. Negotiations on the few remaining protocols continued, as did the delivery of heavy fuel oil. Spent fuel from the DPRK's frozen reactor was stored safely under Agency seals.

16. The United States continued to attach great importance to close co-operation with Japan and the Republic of Korea on DPRK issues. The United States supported the efforts of the President of the Republic of Korea to reduce tensions on the Korean Peninsula. Following President Bush's announcement in June 2001 of his decision to undertake talks with the DPRK, the United States had stated its willingness to hold discussions on a number of occasions.

17. Notwithstanding such political advances, his country was increasingly concerned over the continuing lack of progress on outstanding safeguards issues. He urged the DPRK to begin co-operating with the Agency on the first concrete steps to verify the correctness and completeness of its initial declaration without further delay. Such co-operation was essential for the future implementation of the Agreed Framework and the timely completion of the light-water reactor project.

18. Mr. ENDO (Japan) pointed out that the Agency safeguards agreement with the DPRK remained in force and binding. As a State party to the NPT, the DPRK had to abide by that agreement and comply fully with its obligations. His Government was concerned that the Agency had still not been able to verify the correctness and completeness of the DPRK's initial declaration of nuclear material, owing to the DPRK's continued refusal to co-operate fully with it. Consequently, the Agency was not yet able to give credible assurances that undeclared activities had not been carried out in the DPRK.

19. The provision of key nuclear components to the DPRK for the KEDO light-water reactor project was contingent upon that country's full compliance with its safeguards agreement. In order to ensure that those components were delivered in good time, the DPRK should take steps without delay to improve its relationship with the Agency. In that connection, his Government was pleased that the DPRK had decided to dispatch representatives to participate in the Agency seminars held in Hanoi and Canberra. He called upon the DPRK to normalize its relations with the Agency surely and steadily with a view to rejoining the organization in due course.

20. The Agency's expertise in such areas as nuclear safety had an important role to play in ensuring the safe operation of the KEDO light-water reactors. Japan commended the Secretariat's efforts, in particular the technical consultations it had held with the DPRK in May 2001, and the detailed first-step proposal it had presented for verifying the correctness of the DPRK's initial declaration. He urged the DPRK to make a positive response to that proposal as soon as possible.

ORAL REPORT BY THE CHAIRPERSON OF THE COMMITTEE OF THE WHOLE

21. Ms. HERNES (Norway), Chairperson of the Committee of the Whole, presented the outcome of the Committee's deliberations on agenda items 10, 11, 13 and 14. The Committee had recommended that the Conference adopt the draft resolutions on the four items in question. Some Member States had expressed reservations on draft resolution A in the Annex to document GC(45)/8 under agenda item 11, while joining the consensus; one Member State had expressed a reservation on the draft resolution under agenda item 13.

22. The PRESIDENT invited the Conference to take up one by one the items considered by the Committee of the Whole.

**The Agency's accounts for 2000** (agenda item 10)

23. As recommended by the Committee of the Whole, the draft resolution on page I of document GC(45)/7 was adopted.

**The Agency's programme and budget for 2002-2003** (agenda item 11)

24. As recommended by the Committee of the Whole, draft resolutions A, B and C in the Annex to document GC(45)/8 were adopted.

**Scale of assessment of Members' contributions towards the Regular Budget** (agenda item 13)

25. As recommended by the Committee of the Whole, the draft resolution on page 3 of document GC(45)/24 was adopted.

**Rules regarding the acceptance of voluntary contributions** (agenda item 14)

26. As recommended by the Committee of the Whole, the draft resolution contained in the attachment to document GC(45)/9 was adopted.

The meeting rose at 12.25 p.m.

**Report to the forty-fifth General Conference of the IAEA  
from the fourth Scientific Forum  
Nuclear Technology for Sustainable Development: Serving Human Needs**

1. The principal objective of the Scientific Forum was to increase Member States' awareness that technical co-operation in non-power nuclear applications can produce cost-effective solutions to high-priority problems of sustainable development and create positive socio-economic impact. The Forum was well attended and was greatly enriched by the participation of eminent experts and an audience that covered a broad range of experience and perspectives including development specialists, economists, public information specialists and policy makers.
2. Experts in the field of sustainable development analysed the interconnections between science, technology and development. Discussions were held in the context of the need to develop mechanisms that will enhance the role of technical co-operation in mobilizing science and technology activities in response to the growing challenge of serving human needs in Member States in a sustainable manner. Two keynote addresses by internationally prominent experts on science and development identified four impediments to the successful transfer of technology to, and its utilization by, developing countries. These included (i) the small "marketplace" that exists for technological innovations in poor countries; (ii) the difficulties of achieving and maintaining in these countries a critical mass of scientists and engineers; (iii) the basic ecological differences that often render temperate-zone technology inapplicable to the tropics, where most of the world's poor live; and (iv) the disproportionate impact of anthropogenic climate change on poor, tropical countries. It is noteworthy that, while the first factor is largely beyond the Agency's power to influence, the IAEA's technical co-operation efforts do address the other three by, first, helping to create and maintain cadres of well-trained scientists and engineers through human resource development activities that reach more than 4000 persons each year; second, by assisting in the development and transfer of technology that focuses on solving poor countries' real problems; and third, by helping to keep open the option of energy sources that do not involve greenhouse gas emissions.
3. The Forum focused on three areas of nuclear applications. Successful cases of technology transfer in the application of non-power nuclear technologies for the promotion of food security, management of water resources and improving human health, were reviewed by specialists in those areas.
4. The first area of focus was *improving food security* covering the key roles of isotopes and radiation in enhancing food security through overcoming basic ecological constraints on agricultural productivity as well as their use in promoting more efficient use of land, water and biological resources.
5. Presentations highlighted the Sterile Insect Technique as a highly successful intervention tool against a variety of insect pests and vectors of disease. The use and cost-

benefit attributes of the Sterile Insect Technique as a tool for the control or eradication of the Mediterranean fruit fly in different countries were reviewed and their impact assessed.

6. One of Africa's most serious constraints in agricultural production is trypanosomosis, a severe disease affecting human beings and domestic animals, which is transmitted by the tsetse fly. The problem of the tsetse fly has, in recent times, reached unprecedented levels with increased tsetse fly infestation and record high disease incidence, a situation that has been greatly exacerbated by the unavailability of effective or sustainable methods of eliminating the tsetse fly vector or treating the disease. IAEA and FAO developed the Sterile Insect Technique against tsetse flies and demonstrated its effectiveness in a model project conducted in co-operation with the United Republic of Tanzania on the island of Zanzibar. This success has fuelled the hopes of affected African countries in the possibility of eliminating the scourge of tsetse-transmitted diseases from Africa and led to the adoption of a decision by the African Heads of State and Government, urging countries to embark on a Pan African Tsetse Eradication Campaign (PATTEC).

7. Another presentation illustrated the important role of radiation in plant breeding. Exposing seeds and other plant tissues to radiation enhances the mutation rate and increases the overall genetic variability to create new cultivars. Examples of large economic gains resulting from the use of improved mutant cultivars were given. The new advances in molecular biology will enhance the role and importance of induced mutations as a tool for identifying genes and understanding their function.

8. The second area of focus was *water resource management* where the discussion was on the role of isotope hydrology in enabling a sustainable management of water resources. The earth's limited freshwater resources are under increasing stress from a growing population and over one billion people still lack access to safe drinking water. Lack of adequate knowledge of the processes governing the hydrological cycle and poor management practices constrain our ability to provide sufficient water for sustaining human development. The needs for improved hydrological information and integrated approaches to water resource development and management were highlighted in this session. One of the presentations focused on the status of water resource assessment and development in Ethiopia, where only about 5% of the total water resource potential has been exploited so far while significant shortfalls remain in fulfilling the domestic and agricultural water demands. The second presentation discussed one of the major public health crises of our times resulting from arsenic poisoning of groundwater used for drinking in Bangladesh. Over a hundred million people are affected by this and there is an urgent need to find alternative sources of safe drinking water for the rural population. Both presentations noted the crucial role of isotope applications in developing the hydrological knowledge base for management decisions. The panel members for this session provided a more in-depth discussion of the critical nature of the water resources and the potential benefits of the use of isotope hydrology.

9. The session on *improving human health* discussed the use of isotopes in a variety of areas – disease diagnosis, human nutrition and cancer treatment. One presentation dealt with a programme for neonatal screening for congenital hypothyroidism and phenylketonuria in Thailand. Over 1.4 million babies have so far been screened under the programme and it is expected that by the year 2002 all newborns will be provided with screening services resulting in a better quality life for the next generation. The presentation on radiotherapy for cancer treatment outlined the programme in Costa Rica, emphasizing the growing problem of cancer in developing countries as a function of improvement in life expectancy of the populations. During panel discussion the success story of the establishment of radiotherapy facilities in Ghana through technical co-operation with the Agency were highlighted. The critical importance of well-trained personnel and a quality control system for ensuring administration of effective and safe treatment were emphasized.

10. Isotopic methods provide sensitive measurements of biological effects and are faster than conventional methods for detecting changes in growth and body composition. Aspects of micronutrient malnutrition, such as the bioavailability of vitamins and minerals, breast milk volume and intake, energy expenditure and balance, etc. are easier to evaluate with isotopic than biochemical methods. Stable isotopes have been used, to good effect, to evaluate nutritional intervention schemes, such as mineral supplementation programmes, to guide the design and optimization of the refinement necessary to correct particular disorders.

11. A number of generic issues were addressed in the lively panel discussions that included active participation from the floor.

- There are many *nuclear techniques* that can be used to address some major agricultural, health and climate issues of importance to the socio-economic development of Member States – issues that market forces do not necessarily drive – but these have not been fully exploited. It was recognized that there is a need to get to users – growers, patients etc. The following questions were asked. Which of these techniques are applied? Do current procedures actually make this happen? It was recognized that the process of technology transfer was not simple; it is a shared responsibility between Member States and the Secretariat. It was also acknowledged that some technologies sell themselves while others need working through. One important factor for success is to identify clients or customers for the technology and make sure that they are talked to.
- **Government commitment** is crucial for successful technology transfer and application. In this respect the role of the Country Programme Frameworks (CPFs) that are developed jointly by Member States and the Secretariat are crucial. To ensure that CPFs effectively serve the purpose they are intended for, ownership must be with Member States.
- **Comparative technology assessment:** It is acknowledged that nuclear technology alone may not be able to address certain problems and a package involving both nuclear and non-nuclear technologies may be needed. Moreover, the nuclear component of a technological package varies in importance. Thus, a comparative technology assessment

is always needed before investments are made by Member States. An effective blend of nuclear and non-nuclear technologies is one that incorporates the knowledge available on the ground and adapts to local conditions. Thus, this assessment should be done by Member States themselves and the role of the Agency is to provide advice and information to support the assessment and decision-making. A number of factors such as direct and indirect benefits, cost, environmental impact, and public opinion need to be considered. Successful programmes are often complex because they link all the factors during planning and implementation.

- The Technical Co-operation Strategy is based on the concept of “**Partnership in Development**”. Partnership with other organizations such as FAO, WHO, UNEP and NGOs is important because nuclear technology is not a stand-alone technology at problem solving level and needs to be part of a package. A number of factors essential for effective partnership were discussed.
- Related to the issue of partnership is the involvement of the **private sector**. The private sector is needed not only as consumers of the technology but also as a source of funds for technology transfer programmes. It was, however, stressed that even under the environment of free-market economy the public sector is needed for guaranteeing funding and for offsetting private sector losses.
- **Sustainability and self-reliance** are considered essential elements of technical co-operation. Sustainability and self-reliance considerations should be built into the Country Programme Frameworks and, since the Agency’s technical co-operation programmes are implemented through individual projects, the design of each of these projects should include relevant elements where applicable.
- **Human capacity building** is central in technology transfer to address developmental needs. The Forum noted that the Agency is playing an important role in this area and needs to enhance this function.
- **Public information** is crucial for promoting the use of nuclear technology and for attracting Government commitment. It is important for the public to understand how science and technology works because it is they who will finally determine whether or not a certain technology is adopted.

12. The Forum provided an excellent opportunity not only to highlight the important role that non-power nuclear technologies can play in assisting Member States in their efforts to meet basic needs – related to food security, health, water and environment, but also provided an opportunity for Member States, the Agency and other partners to discuss how they can work together to further enhance sustainable technology transfers.

13. A full report on the proceedings of the Forum will be coming out towards the end of the month.