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RECORD OF THE NINTH PLENARY MEETING

Held at the Austria Center Vienna
on Friday, 20 September 2002, at 10.05 a.m.

President: Mr. RAJASA (Indonesia)

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[*] GC(46)/19.

The composition of delegations attending the session is given in document GC(46)/INF/8/Rev.1.

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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
LWR	Light-water reactor
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NPT Review Conference	Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

REPORT OF THE SCIENTIFIC FORUM

1. The PRESIDENT invited the Rapporteur, Mr. Ridwan, to present the report of the Scientific Forum.
2. Mr. Ridwan presented the report which is reproduced in the Annex.
3. The PRESIDENT thanked Mr. Ridwan for his most interesting report and the Secretariat for their excellent preparation of the Scientific Forum.

The meeting was suspended at 10.25 a.m. and resumed at 12.20 p.m.

IMPLEMENTATION OF THE NPT SAFEGUARDS AGREEMENT BETWEEN THE AGENCY AND THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA (GC(46)/16, GC(46)/L.2 and Add.1 and 2)

4. Ms. HALL (Canada), introducing the draft resolution contained in document GC(46)/L.2, said that for some ten years the DPRK had not permitted the Agency to implement its NPT comprehensive safeguards agreement. The resolution registered deep concern over the DPRK's non-compliance with that agreement and urged it to comply forthwith, notably by allowing the Agency to verify the correctness and completeness of its initial declaration. Adoption of the resolution without a vote would send an important signal with respect to the international community's resolve to see the DPRK comply with its safeguards agreement. Her country had therefore drafted the resolution in consultation with other concerned countries, and had taken their views into account in order to attract consensus support. The resolution had been widely sponsored by countries from all regional groups, reflecting the global nature of the concern over the issue.
5. Mr. Young-jin CHOI (Republic of Korea) said that for several years the General Conference had adopted with overwhelming support a resolution expressing its continuing concern over the DPRK's non-compliance with its safeguards agreement with the Agency, and urging that country to comply fully at an early date. Despite strenuous efforts over the preceding year, no tangible progress had been made, and the Agency remained unable to verify the DPRK's compliance. The DPRK's refusal to implement its legal obligations constituted a major challenge not simply to the Agency's safeguards system, but to the basic framework of the global nuclear non-proliferation regime. He strongly urged the DPRK to implement its safeguards agreement and to respond positively and promptly to the Agency's proposals for the verification of the correctness and completeness of initial declaration. The Agreed Framework had served as an important mechanism for addressing that issue and the KEDO LWR project was progressing well. Early implementation of the safeguards agreement was a prerequisite for the timely delivery of key nuclear components for that project and it was therefore essential that the Agency begin its inspection activities without further delay. The draft resolution sent a clear message and his country would like to see it adopted without a vote.
6. Mr. ZHANG Yan (China) said that the problem should be solved through co-operation and consultation between the parties concerned and strict implementation of the

Agreed Framework, and no steps should be taken which would further to complicate the situation. There had recently been a number of positive developments in the region indicating that all parties were committed to maintaining peace and stability, and the international community should welcome those developments. The Agency should continue to play a constructive role. Early completion of the KEDO project would also contribute to the solution of the issue.

7. The PRESIDENT said he took it that the General Conference wished to adopt the draft resolution contained in document GC(46)/L.2.

8. It was so decided.

9. Mr. TAKASU (Japan) stressed that the Agency's safeguards agreement with the DPRK remained in force and binding. Japan continued to be concerned that the Agency had been unable to verify the correctness and completeness of the initial declaration made by the DPRK and that it was thus unable to provide credible assurance that undeclared activities had not been carried out.

10. Under the terms of the Agreed Framework, the provision of key nuclear components for the KEDO LWR project was contingent upon the DPRK's full compliance with its safeguards agreement. The matter was therefore extremely urgent. If those key components were to be delivered in a timely manner, the DPRK would need to take prompt action, and he expressed the hope that the Agency would promote co-operation with a view to achieving that end. Japan had a strong interest in the success of the KEDO project which benefited peace and stability in East Asia. He called on the DPRK to meet the expectations of the international community and to take steps to normalize its relations with the Agency, with a view to rejoining it in due course.

11. In the recent Japan-DPRK Pyongyang Declaration, the DPRK had declared its willingness to comply with all relevant international agreements, including the NPT, its safeguards agreement and the Agreed Framework. In the light of that declaration, he urged the Agency to hold technical consultations to address verification issues as soon as possible in order to facilitate the DPRK's full implementation of its safeguards agreement.

12. Mr. BERDENNIKOV (Russian Federation) said that the DPRK, as a State party to the NPT and an IAEA safeguards agreement, had to comply fully with its international obligations. That position was reflected in the draft resolution that had just been adopted. However, implementation of the safeguards agreement would not be enough in itself to ensure non-proliferation in the DPRK. That would require full implementation of the Agreed Framework which laid down a timetable for inspections in connection with work on the KEDO LWR project. He welcomed the continued constructive dialogue in the region and hoped it would have a positive effect on relations between DPRK and the Agency.

13. Mr. ZHANG Yan (China) said his Government had always held that the Korean Peninsula should be free from nuclear weapons. The parties concerned should, on the basis of equality and mutual respect, strictly implement the relevant agreements. Dialogue and

consultation, rather than pressure and confrontation, should be employed in seeking a solution to any possible differences.

APPLICATION OF IAEA SAFEGUARDS IN THE MIDDLE EAST
(GC(46)/9, Corr.1, Add.1 and Add.2; GC(46)/L.1, Rev.1 and Add.1)

14. Mr. SERRY (Egypt), introducing the draft resolution contained in document GC(46)/L.1/Rev.1, said that it aimed at reinforcing peace and stability in the Middle East and promoting the application of Agency safeguards throughout the region. In 1981 the United Nations Security Council had adopted resolution 487 which urged Israel to submit its nuclear facilities to Agency safeguards. The objective of creating in the Middle East a region free of all weapons of mass destruction, including nuclear weapons, could not be achieved if Israeli facilities were not also subject to safeguards. In continuing to disregard the concerns of Egypt and other countries, Israel was failing to contribute towards the common goal of establishing peace and security in the Middle East. Moreover, at a time when the threat of nuclear terrorism was prompting increasing concern, Israel's refusal to submit its facilities to safeguards made it a potentially hazardous source of nuclear material for wrongdoers. Israel had repeatedly prevented the adoption of the positive measures contained in the draft resolution and Egypt invited the international community, and in particular the General Conference, to adopt practical measures to urge Israel to accept the draft resolution, which it hoped would be adopted by consensus.

15. Mr. IBRAHIM (Iraq) said that the international community was aware of the significance of applying the Agency safeguards throughout the Middle East. However, efforts in that direction were blocked by Israel's refusal to accept safeguards, the only country in the region to adopt such a position. Equally, Israel refused to accept other measures, notably Security Council resolution 487, and the governments of the United States of America and the United Kingdom continued to apply double standards when it came to the implementation of Security Council resolutions. Iraq called on the international community to fulfil its responsibilities with respect to the establishment of a nuclear-weapon-free zone in the Middle East and urged it to exert sufficient pressure on Israel for that country to adhere to the NPT and submit all its nuclear facilities to Agency safeguards, declare its nuclear arsenal for dismantling under Agency monitoring and abandon the nuclear option once and for all.

16. Mr. BAHRAN (Yemen) said that all countries in the Middle East should accept Agency safeguards without exception. The draft resolution was of the utmost importance, and his delegation hoped that it would be adopted by consensus.

17. Mr. SALEHI (Islamic Republic of Iran) said that his country had first called for the establishment of a nuclear-weapon-free zone in the Middle East in 1974; Israel alone had remained unco-operative, consistently shrugging off the call of the international community for safety and peace, turning its back on world public opinion and refusing even to allow the Agency to inspect its nuclear installations. Such an arrogant attitude could have unforeseeable consequences in the region. Adherence to the NPT by all States of the region was an essential preliminary step towards the establishment of a nuclear-weapon-free zone in the Middle East.

18. The PRESIDENT said he took it that the General Conference wished to adopt the draft resolution contained in document GC(46)/L.1/Rev.1.

19. It was so decided.

20. Mr. OTHMAN (Syrian Arab Republic) said that many paragraphs of the resolution did not truly reflect the current situation. It referred to talks in the Middle East, but Israel was against such talks and even in favour of war. It referred to the multilateral working group on Arms Control and Regional Security, which had not met since 1994. It made no specific reference to Israel, and did not invite Israel to implement the Agency's safeguards system. It was unfortunate that, in spite of all those shortcomings, the resolution had been adopted. However, his delegation had accepted the text as it was because it did not wish to block consensus.

21. Mr. TOUQ (Jordan) said that his Government had a vital interest in the establishment of a zone free of all weapons of mass destruction, including nuclear weapons, in the Middle East. Israel was the only country in the region which had not submitted its nuclear facilities to Agency safeguards or to any form of international control or inspection, and the resolution did not pursue the common goal of freeing the Middle East of the threat of nuclear weapons and of establishing lasting peace in the region. Jordan, as one of Israel's closest neighbours, was one of the countries most at risk from its nuclear activities and he called on the Director General, and those countries that were able to do, so to exert the greatest possible pressure on Israel to persuade it to accede to the Agency's safeguards system and submit its nuclear installations to international monitoring. Jordan had supported the resolution because it did not wish to block consensus.

22. Mr. FRANK (Israel) said that his country had joined the consensus on the resolution, in spite of its inherent deficiencies, because it recognized that a nuclear-weapon-free zone could eventually serve as an important complement to overall peace, security and arms control in the Middle East. The resolution contained elements which ran counter to Israel's policies, and his country's decision not to block consensus should not be interpreted as an indication of its agreement with all the resolution's provisions. Israel had always maintained that nuclear and other regional security issues should and could only be dealt with in the context of the peace process. Moreover, a regional nuclear-weapon-free zone had to be supported by all States in the region and could not be imposed upon regional parties. It was a basic premise of any regional security and arms control process that the security margins of any participating State should be appropriate to its perception of threat and should not be diminished through the process. Any progress involving a decrease in security margins had to be based on mutual steps to maintain security. The participation of all States in the region in such a process was an essential prerequisite, for the simple reason that reciprocal relationships had to prevail for all regional parties.

23. The sombre experience of Iraq should remind the General Conference of the stark realities in the Middle East. Given such political realities, a practical, step-by-step approach was the only way forward, beginning with confidence- and security-building measures carefully selected so as not to detract from the security margin of any State in the region, continuing with the establishment of peaceful relations and reconciliation between peoples,

and dealing in due course with conventional and non-conventional arms control as a complement to the process. Such an approach had been successfully adopted in Europe, beginning with the policy of peaceful co-existence in the late 1960s and passing through the Helsinki process to arms control and disarmament measures. The way to build security was to aim high, but to start modestly and move ahead carefully. Recent statements by Israel's neighbours were not only discordant with the responsibilities and mission of the Agency; they also undermined confidence-building and might make the road ahead even more tortuous. He looked forward to a better future of reconciliation, security and peace in the Middle East.

ISRAELI NUCLEAR CAPABILITIES AND THREAT (GC(46)/1/Add.1)

24. The PRESIDENT said that, pursuant to consultations, it had been agreed that he would read out the following statement, for endorsement by the General Conference, which was the result of a delicate compromise:

“The General Conference recalls the statement by the President of the 36th session in 1992 concerning the agenda item “Israeli Nuclear Capabilities and Threat”. That statement considered it desirable not to consider that agenda item at the 37th session. The General Conference also recalls the statement by the President of the 43rd session in 1999 concerning the same agenda item. At the 44th, 45th and 46th sessions, this item was, at the request of certain Member States, re-inscribed on the agenda. The item was discussed. The President notes that certain Member States intend to include this item on the provisional agenda of the 47th regular session of the General Conference.”

25. Mr. YOUSSEF (Egypt) said that there was an urgent need for progress in the areas of nuclear non-proliferation and disarmament in the Middle East owing to the threat to peace and stability in the region. Egypt had launched an initiative aimed at setting up a nuclear-weapon-free zone in the Middle East in 1974 and had repeatedly called for Agency comprehensive safeguards to be applied to all nuclear facilities in the region. Without exception, the Arab states had acceded to the NPT and had submitted all their nuclear facilities to Agency safeguards. Israel was the only State in the region which had not acceded to the NPT and had refused to submit its nuclear facilities to Agency safeguards. The final document of the 2000 NPT Review Conference had underlined the importance of Israel's accession to the NPT and its acceptance of safeguards. Sadly, the international community had proved unable to apply its resolutions because one State did not respect them and paralysed the efforts of others to make progress. The existence beyond Egypt's northern border of a nuclear programme that was not subject to Agency safeguards created a dangerous situation in the region, which would continue until there was the international will to end it. Meanwhile, doubts would be created as to the effectiveness of the safeguards system and genuine non-proliferation efforts. The international community should face up to its responsibility to create a nuclear-weapon-free zone in the Middle East. The fact that the item had been on the agenda of the General Conference for so many years demonstrated its continuing importance and its direct link with the Agency's work and objectives as set out in Article II of the Statute.

26. The PRESIDENT asked whether the Conference was prepared to endorse the statement he had read out.

27. The Conference endorsed the Presidential statement.

28. Mr. OTHMAN (Syrian Arab Republic) said that the request that Israel accede to the NPT and submit all its nuclear facilities to the Agency safeguards was fully in accordance with Security Council and General Assembly resolutions. The international community had not brought the same pressure to bear upon Israel to implement relevant Security Council resolutions as it had done upon other States in the region. It was a matter of vital importance that Israel be required to abandon the nuclear option and thus enable a nuclear-weapon-free zone to be established in the Middle East. If the international community wanted stability in the Middle East, it would have to eliminate the imbalance of forces in the region resulting from Israel's possession of nuclear weapons. He expressed the hope that the topic would receive the attention it deserved at the 47th regular session of the General Conference.

The meeting rose at 1.25 p.m.

**Report to the forty-sixth regular session of the IAEA General Conference
from the fifth Scientific Forum**

1. The 5th Scientific Forum, organized during the 46th regular session of the IAEA General Conference, took place in the Austria Center, Vienna, on 17-18 September 2002, and focused on three topical issues: Nuclear Power - Life Cycle Management; Managing Nuclear Knowledge; and Nuclear Security. Each of the three sessions consisted of presentations by leading experts in the field, followed by panellists' comments and then discussions with participants. Also each session was moderated by a leading expert in the respective field.
2. The discussion on Nuclear Power - Life Cycle Management was devoted to two sub-topics, namely Life Extension of Nuclear Power Plants and Decommissioning. The nuclear industry is, at present, at a crucial juncture, where it has to decide about the future of the first generation of nuclear plants, which are approaching the end of their licensed service life. At the same time, long term experience and new advances have established that it is possible to extend the life of nuclear plants beyond their initially licensed life by another 20-30 years. While some utilities and regulatory bodies have already gone ahead with license renewal or extension, many others are still exploring various possibilities concerning these processes.
3. The session addressed key issues, concerns and trends in the life cycle management of nuclear power plants – from construction to operation and then to decommissioning. Measures to cope with ageing plants, licence renewal, expected growth in electricity demands and the need to find sustainable long term solutions for closed or ageing nuclear facilities were presented, including examples of experience from FORATOM, Japan, the United Kingdom, the United States, the Russian Federation and Hungary.
4. Life extension is considered to bridge the gap between ageing and new plants and between energy demand and supply. It is technically feasible, economically attractive and able to be regulated successfully. Nuclear power plants are capital intensive and therefore extension of their operating life will provide a very significant financial advantage besides avoiding new generation capacities. The cost of an NPP life extension, according to Russian experience, is around US \$160–200/kW installed capacity, while in the US the process costs 10 – 15 M US\$ per unit, excluding any cost of additional hardware since plant upgrade is not part of the licence renewal process.
5. Information from the European Commission's Green Paper on the Security of Energy Supply and current policy development indicates that the potential growth of the European Union together with the reduction of nuclear energy as plants reach the end of their life would lead to an increase in CO₂ emissions by 31% and a dependency for the enlarged Union on imported energy of 60%. In the United States, ten licences have been renewed to permit a 60 year operational life; nearly half of the existing plants have submitted licence renewal applications and many more were expected to do so.

6. For decommissioning, it is not efficient or reasonable for each country to develop its own technologies and approaches. The costs of decommissioning are high and may place a heavy burden on national budgets. The most cost effective approach includes the use of proven practices rather than each organization developing new techniques. Decommissioning should be a key consideration in the design of new facilities, which would save much time and effort and reduce the risks of exposure during decommissioning.

7. It is essential to recruit and maintain a strong and highly skilled workforce to ensure secure, safe and economic future licence renewal and plant decommissioning operations. The motivation of this workforce should be a major concern of the facility management. This should ensure that the operational culture of the plant is maintained at a high level as the plant is seen to be reaching the end of its economic life, and plant activities involve restoring the environment rather than creating energy.

8. The IAEA could act as a catalyst to enable the dissemination of experience in licence renewal and decommissioning activities to all Member States. In addition, the IAEA should identify proven practices in licence renewal and procedures that have been demonstrated, to achieve efficient review of applications. The IAEA should produce guidance on the scope of safety and environmental reports in support of licence renewal and on standards and proven practice required to achieve safe and economic operations during decommissioning. The issues arising from this session require further consideration. It is proposed that these issues are presented to SAGNE (Standing Advisory Group on Nuclear Energy), TWG (Technical Working Group) on Plant Life Management and the proposed TGDE (Technical Group on Decommissioning) so that advice can be sought and given on future actions to be taken.

9. The second session of the Forum focused on Managing Nuclear Knowledge and served to re-enforce the view that nuclear knowledge is a timely subject of strategic importance. It is an issue that concerns all Member States that use nuclear technologies for either power or non-power applications. It needs to be addressed to ensure the continued safe use of these technologies.

10. Throughout the discussions, participants, keynote speakers and panellists strongly endorsed the key findings from the meeting of senior officials on Managing Nuclear Knowledge held in June 2002, in particular with regard to:

- the urgency of the problem,
- the clear understanding that all nuclear technology and its innovation relies on nuclear knowledge, and
- the importance of addressing succession planning and preserving knowledge.

11. It was the consensus view that preserving and enhancing nuclear knowledge is a topic on which the Agency is well suited to take a leading role, particularly in terms of promoting Member States' increased awareness of the issues involved, and in facilitating international

and regional collaboration. A proposal was made for the Agency to establish, as soon as possible, a working group to address these issues, including giving practical advice on both the programme and its implementation. Also, participants emphasized that this new activity needs to be equipped with sufficient resources and funding, and that extrabudgetary contributions by Member States as well as resources from the Regular Budget would be needed.

12. The moderator of the session noted that a resolution on "Knowledge Management" would be submitted to the General Conference. The very large number of Member States co-sponsoring this resolution in the Committee of the Whole clearly shows the great importance Member States assign to that topic.

13. Problems were identified and possible innovative solutions proposed, including long distance education, clusters and networks and a knowledge management portal. Now, it is time to take action and to give increased attention to knowledge management activities in the Agency, notably in terms of funding and resource allocation.

14. In the session on Nuclear Security, the keynote speakers spoke on issues related to risk assessment, the control of radioactive sources and new approaches to protecting nuclear material and facilities. It was noted that security was not a new concern for the nuclear industry, which had long considered the threat of theft of [special] nuclear material and sabotage. Extensive measures had already been taken in the field of physical protection. Furthermore, nuclear power plants have the strongest defensive capabilities to be found in the commercial world: the result of inherent defensive capabilities arising from designs to withstand extreme events. Nonetheless, further measures are needed to improve security measures, to identify and mitigate vulnerabilities, and to refine the assessment of potential threats.

15. Identifying and evaluating potential threats and the consequent assessment of risks have an added impetus since the events of last September. Preventative measures result from an assessment of the threat and risk. To these could be added precautionary measures, which address the consequences of an event without being able to fully assess the risk that it will occur. Security assessment is not like establishing a safety case, which could rely on redundancy and sound scientific knowledge, separation and diversification, and identification of common mode failures.

16. It was noted that there was a distinction to be made between threats which should be addressed by the State (e.g. aircraft hijacking, or attacks involving significant military capabilities), and those which are facility related (e.g. a direct assault on a nuclear plant by a small group), which would be the subject of the Design Basis Threat and are the responsibility of the operator. The boundary between the two is not clear and must be clarified.

17. The session also considered the competing interests of maintaining public access to information with the need to protect information. But confidentiality must also be maintained to avoid providing assistance to an attacker.

18. On the issue of radiological sources and their potential to be used in radiological dispersion devices (RDDs or 'dirty bombs') the session considered the risks and consequences. The difficulties in Kazakhstan of identifying and controlling radioactive sources provided a case study in the problems of other States, which found themselves in a similar position. The issues are lack of effective controls, lack of detection equipment, imperfect application of established procedures, and lack of appropriate intergovernmental agreements. The solutions included enhanced accountancy and legislative frameworks for radiation sources, increased physical protection of sources, improved international co-operation on combating illicit trafficking and better response measures. The session recognized a need to establish 'cradle-to-grave' control of radiological sources and that the issue of orphan sources could be solved by ensuring that there was an appropriate 'grave' for sources which had outlived their usefulness.

19. Ideas for enhancing physical protection measures on both a regional and a global scale were proposed. The former included establishing regional networks to exchange information and experience among States. The latter included establishing a list of priorities, which would include revising INFCIRC/225 and developing new security recommendations, along the same lines, for the protection of radiological sources. Such sources are covered by safety guidance but not security guidance covering physical protection. The session recognized the threat of terrorist use of RDDs and the priority of establishing security measures applicable to the radiological sources, which offered the greatest threat. The session also noted a proposal for an International Conference to discuss the threat posed by the potential misuse of radiological materials. Facilities in need of enhanced protection might also be prioritized; assistance may be available under the G8 initiative. Other ideas included creating a multilateral security co-operation system, which intended to facilitate the exchange of information, measures to improve co-operation among nuclear regulators, security forces and intelligence agencies, tagging and tracking the movement of radioactive sources and financial incentives for operators to improve physical protection measures at nuclear facilities.

20. The 5th Scientific Forum addressed three key issues for the nuclear community. In order to ensure the security of nuclear materials, it is necessary to continue safe and economic nuclear operations with the retained knowledge for the future. Proposals have been made for several actions by the Agency and these are commended to you.