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International Atomic Energy Agency



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**Statement to the 40th Session of the General Conference
of the International Atomic Energy Agency
16 September 1996**

**Statement to the 51st Session of the United Nations
General Assembly
28 October 1996**

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Introduction

In many countries around the world today the public sector is examined critically in view of resource constraints. It is natural that also the international public sector be subjected to critical evaluation. To remain relevant and responsive to the interests of their Members intergovernmental organizations must be alert to the need for change and to the need for efficiency in their methods of work.

The subjects of recent years' world conferences—environment, human rights, population and women—signal that our attention is now concentrated on how to improve man's and the planet's wellbeing rather than on how to avoid extinction through nuclear war. This is a welcome change of focus with important consequences for the work of international organizations—including the IAEA.

The Agency was set up nearly 40 years ago to enable all countries to make good and safe use of the dramatic progress in nuclear science and technology and to ensure so far as it was able, that the wide dissemination of this science and technology did not further any military purpose. These missions, laid down in the Statute, remain relevant but as my discussion will show the needs and interests of Member States and the changed international climate have led and is leading to many changes in the thrust of the Agency's programme.

Development and Use of Nuclear Science and Technology

In many Member States today, nuclear science and the development of nuclear techniques are no longer top priority. In many nuclear activities, private enterprise has taken over from government institutions—with the latter focussing

more on the policy framework and regulation. These changes are mirrored in the Agency by a reduced emphasis on basic science and by expanded activities in the fields of nuclear safety and waste. However, science is by no means abandoned. For the international sharing of scientific data and experience and the promotion of some new nuclear techniques, the IAEA remains a very practical - and relatively inexpensive - instrument. I have in mind the Agency's roles *inter alia* in offering a forum for discussion and a framework for co-operation in areas like fusion and accelerator-driven transmutation, which may one day become of great practical importance. Interest also continues in a number of countries in the development of advanced nuclear reactor systems, of fast reactors and in the use of nuclear power for purposes other than production of electricity, e.g. for the production of heat for industrial processes and for potable water. Our Agenda has an item on this subject and a report has been prepared by the Secretariat. (GOV/2855-GC(40)/4)

The safe management, use or disposal of plutonium is a subject that is again calling for attention. The global inventory of civil plutonium will increase for several years to come and disarmament measures will contribute sizeable quantities. What should be done with this plutonium? The issue was raised at the Moscow Nuclear Safety and Security Summit last spring and France will host a meeting in October on "Safe and effective management of fissile material designated as no longer required for defence purposes". The Agency is invited to participate and is also itself arranging a major symposium next June entitled "Nuclear Fuel Cycle and Reactor Strategy: Adjusting to New Realities".

I turn now to the Agency's role in the field of nuclear power. Today nuclear generated electricity is not universally accepted, nor is it invariably the cheapest option. Some governments are determined opponents, some are strong supporters of an expanded use and most governments have a low profile on the subject. The declaration adopted at the Moscow Nuclear Summit last spring probably expressed the views of many governments when, stressing the issue of safety, it declared: "... we are committed to measures which will enable nuclear power, already a significant contributor to electricity supply in those countries choosing

to exploit it, to continue in the next century to play an important role in meeting future world energy demand ...”.

The IAEA programme in this area reflects the shift in government attitudes and interests and now has its emphasis on:

- improving safety in the operation of nuclear power plants;
- promoting the safe management and disposal of nuclear waste; and
- assessing—often together with others—the benefits, risks and costs of the nuclear option and comparing these with those connected with other energy options.

I should like to comment first on our work to assess energy options.

The Agency has a long tradition in assessing the economic cost of generating electricity by nuclear power and comparing it with the cost of other options. The economic cost remains a vitally important factor, influenced by construction time, interest rates, etc. While the costs have generally increased, not least due to additional safety measures, the prospects of standardization, factory produced parts and better planning in construction and operation suggest that in the future the costs of nuclear generated electricity—with fairly large variations from one country to another—will remain competitive with electricity generated through fossil fuels for base load electricity generation. Today, however, comparisons between energy sources cannot be limited to direct economic cost, but must take into account factors such as reliability, energy independence and the impacts on life, health and the environment. The comparative studies of the Agency have been adapted to cover these aspects as well and the data obtained provide interesting input into the discussion of national and global energy mixes.

From experience we know a good deal about the risks posed to life and health and the environment by the different energy sources—coal, oil, gas, hydro, nuclear or renewables. While the highest health risks are connected with accidents and even the normal use of fossil fuels, and while hydropower accidents are responsible for the largest number of casualties, the very small risk of a big nuclear accident—the Chernobyl type—raises the fear of nuclear power. This circumstance tends to blind many to the data which show that there is a steady increase in the reliability of nuclear power and that the impact of civilian nuclear power upon the global environment is minimal. No scenarios for future energy mixes show greater promise to restrain greenhouse gas emissions than those that include a strong expansion of nuclear power generated electricity. Against this background it seems paradoxical that in the discussions connected with the Climate Change Convention and the International Panel on Climate Change, only marginal consideration is given to nuclear power. At the recent second session of the parties to the Climate Convention, Mr. Priddle, Executive Director of the International Energy Agency, was one of the few who focussed on nuclear power. He noted—I quote—that “nuclear power accounted for the greater part of the lowering of carbon intensity of the energy economies of the OECD countries over the last 25 years”.

In my view, the Agency should continue to work dispassionately—preferably together with other international organizations—on the refinement of the relevant data and place them before the fora concerned, e.g. the meetings of the Climate Convention and UN bodies concerned with sustainable development. Global energy consumption is going to increase and the present tendency is for an increase in the use of fossil fuels which accelerates the emission of CO₂. The welcome renewable sources—apart from hydro—will play only a marginal role in the next few decades at any rate. In this situation understanding of the benefits, costs and risks of the nuclear option compared to others is important.

Non-Power Applications

The attitude of governments and the public to most *non-power applications of nuclear science and technology* remains positive and there is no reason for a change of direction in the Agency's efforts to help promote and disseminate these applications, especially to the benefit of developing countries. However, a continuous evaluation is required to ensure that only those nuclear techniques that are clearly superior to other existing or emerging techniques are passed on. Moreover, nuclear techniques which can now be bought by States in the market at reasonable cost, should be obtained through the market. However, the transfer of nuclear applications frequently requires a concomitant attention to training, impartial expert advice and, not least important, to radiation protection—things that are not provided easily except through governmental or intergovernmental channels. Let me mention in this context that one of the largest ongoing TC projects, eventually covering some 50 developing countries, aims at ensuring, before the end of the century, that their legislation and practices in the area of radiation protection are satisfactory. In the field of training, institutions in Member States and our laboratories in Seibersdorf and Monaco provide unique assistance. The Agency is thus facilitating the use of nuclear technology in less developed countries not only by assisting in transferring the required technology but also by helping to ensure that the basic infrastructure is in place.

Technical Co-operation

The many new initiatives and approaches which the IAEA has taken in recent times, including the establishment of the Standing Advisory Group on Technical Assistance and Co-operation (SAGTAC) and the introduction of “model projects” are described in the papers before you, Strengthening of the Agency's Technical Co-operation Activities (GOV/2857-GC(40)/5) and the TC Annual Report for 1995 (GC(40)/3). These new approaches, *inter alia*, place a premium on projects that effectively help the end user to better health, more food and adequate water resources. You will be pleased to hear also that,

through improved management, TC programme delivery has reached a record high and that improvements in quality are evident. Let me further note that the regional co-operation arrangements covering the African, Asia Pacific and Latin American regions (AFRA, RCA and ARCAL) are proving very effective in bringing about technical co-operation among developing countries (TCDC). We try to pursue such TCDC also through contracts with a few centres of excellence in developing countries. In terms of regional priorities, we are particularly mindful of the Secretary-General's special initiative on Africa. As is evident from our activities focussing on water resources, food and health, we continue to pay particular attention to the needs of this region.

We hope that the good performance in TC delivery will be matched by good performance in contributions: that all States—industrialized and developing—pledge their share in full and pay it in full.

Let me now by way of example mention three different projects.

Eradication of Tsetse Fly

Radiation induced sterilization of certain insects—usually called the Sterile Insect Technique—has proved very effective, when combined with conventional control methods, in projects in eradicating the medfly in South and Central America and the tsetse fly in Africa.

The TC Model Project for eradication of the tsetse fly from Zanzibar, Tanzania, which I visited in May, should be completed in the next 18 months. The excellent progress made is attributable to a combination of host Government commitment, bilateral and multilateral funding, co-operation with FAO, and many years of remarkable innovation by the Agency's laboratory at Seibersdorf. Most recently some of the improvements in methodologies for the rearing of flies have been transferred to the tsetse production facility in Tanga, Tanzania.

The results of the Model Project in Tanzania have led to a strong interest by the Ethiopian authorities in an eradication campaign in a 20 000 sq. km. area of the Rift Valley. Such a project would have strong national support and good prospects of funding. I hope it will materialize.

Fighting Soil Salinity

A second example: soil salinity, is a major problem world-wide. Studies and field trials in Pakistan and elsewhere, encouraged by an Agency co-ordinated research programme, have demonstrated that economically viable use of such land is possible through cultivation of salt-tolerant plants. Nuclear techniques are used to determine appropriate soil, water and plant management practices.

Eight countries from North Africa and Asia are now planning to expand the use of this biosaline agriculture through an Inter-regional Technical Co-operation project starting in 1997.

Marine Environment

The third area of work I want to mention is the problem of pollution and rapidly declining fisheries in the Black Sea. It involves the Agency in three ways. First, the Agency's Laboratories of Marine Environment and Hydrology are participating in the international efforts to determine marine processes in the Black Sea. Second, through a TC project, regional laboratories are being equipped and trained to collect marine samples, to monitor marine radioactivity, and to apply marine tracer techniques. A third component is the collaboration with the Global Environment Facility's Black Sea Environmental Programme to upgrade the region's capacity to monitor organic and inorganic pollutants.

The main difficulty in our inter-agency work on the marine environment issue is the unpredictability of extrabudgetary funding. On the other hand, I am pleased to report the continued unstinting generosity of the Principality of Monaco, which is providing the Marine Environment Laboratory with new

excellent facilities for its research and training programmes.

Nuclear Safety

I turn now to the field of nuclear safety, where over the years the Agency has significantly expanded its activity—in response to the wishes of Member States. It has come to be recognized—most recently at the Moscow Nuclear Summit—that nuclear safety in any country is the legitimate concern of all other countries. While it has not been suggested that supervisory or regulatory functions should be conferred on the IAEA, it has been concluded that the IAEA is the appropriate institution to use for the establishment of an international infrastructure comprising three main elements—basic binding conventions, recommended standards and advisory services and assistance.

Within the IAEA Secretariat these activities are now the charge of a separate Department and during this year the various advisory groups, in which government experts consider draft international safety standards and guides, have been strengthened and reorganized. Through these changes strong input and guidance from Member States and products of high quality and consistency should be ensured.

The number of *international conventions* which provide legally binding norms as part of the regulatory framework is increasing. While the so-called Chernobyl Conventions on Early Notification of a Nuclear Accident and on Emergency Assistance were concluded in 1986, the Convention on Nuclear Safety, which addresses the safety of nuclear power plants worldwide, will enter into force very shortly, on 24 October—United Nations day! I urge all governments that have not yet ratified the Convention to try to speed up the required procedures. A meeting of the States parties will take place within six months of the entry into force to prepare for the full operation of the Convention.

Another important event will be the expected adoption, next year, of new rules in the field of nuclear *liability*. After years of difficult work in the

Standing Committee of Legal Experts, it now seems that sufficient agreement has been reached on the major issues to call a diplomatic conference to revise the Vienna Convention and to adopt a convention on supplementary funding. I hope the momentum which has built up through progress in the negotiations, through the signature by Russia of the Vienna Convention on 8 May and through the declaration of the Moscow Nuclear Summit, will lead us to agreement and also encourage more States to sign the Vienna Convention.

A third important development is the drafting of a convention on the safety of radioactive waste management. Much progress has already been made in an international working group headed by a former President of this General Conference, Professor Alec Baer. I hope that Member Governments will move to settle the issues yet unresolved without much further delay so that a conference to conclude the Convention can be called next year.

In the field of nuclear safety, let me lastly refer to the provision of services and assistance. For a number of years we have offered peer reviews under OSART, ASSET and other programmes. These services will remain available but in the interest of economy and as many are now familiar with the review methodologies, emphasis will shift to missions ensuring quality of similar national safety services. In the area of safety assistance, attention continues to be devoted to reactors built to earlier standards, notably WWER-440 and RBMK type reactors.

Radioactive Waste and Spent Fuel

As greater quantities of spent nuclear fuel and nuclear waste result from the civilian nuclear activities, governments are increasingly interested in sharing knowledge and experience. Given that some such material is transported between countries, that in the past some has been disposed of at sea and also that some long-lived waste will be a heritage to future generations, there is also a legitimate international interest in commonly respected standards of conduct. The Waste Management Convention, which I have just mentioned, is an impor-

tant way of responding to this interest. So are the standards developed by the IAEA in the RADWASS programme and the related services which are available.

The idea of regional nuclear waste disposal sites is advanced from time to time. While it is evident from some of the reactions to this concept that its time has not yet come, it is hard to understand why such regional sites freely accepted should be more worrisome than regional disposal sites for any other toxic substances. From a global point of view and from the view point of economy, it would seem preferable to have a smaller number of well-placed, well-equipped, repositories for shared disposal than expecting every country, regardless of the size of its nuclear activities and resources, to arrange such facilities.

Let me note two other developments.

Waste Management in the Russian Federation

First, at the request of the Nordic Council and with the co-operation of the Russian Federation, the Agency organized, in May 1995, a Seminar on International Co-operation on Nuclear Waste Management in the Russian Federation. Following that seminar, a Contact Expert Group (CEG) was established under the auspices of the IAEA for international projects in the Russian Federation. Nine countries are already full participants. The IAEA has agreed to provide secretariat services to it including, if required, assistance to identify priority activities and help to match partners with projects.

Spent Fuel from Research and Test Reactors

Second, many countries which have acquired research reactors in the international market have experienced difficulties in the disposal of the spent fuel. In July 1993 I wrote to the Secretary of Energy of the United States urging the renewal by the US Department of Energy (DOE) of its Off-Site Fuel Policy under which foreign research reactor spent fuel of US origin was returned to the

US. On 2 February 1995, I also wrote a letter to the Minister for Atomic Energy of the Russian Federation suggesting a similar take-back programme of foreign research reactor spent fuel enriched in the former USSR. I welcome the move by the US to resume for a number of years a programme for returning spent fuel of US origin and I hope that similarly positive steps could be taken by other suppliers of research reactor fuel.

Assessment and Remediation

While most of the Agency's activities aim at making current or future nuclear activities safer or more effective, the IAEA is also being called upon to provide professional and impartial international assessment of the causes and consequences of accidents with radiological consequences and of the effects of nuclear testing.

The International Conference on the Consequences of the Chernobyl Accident

In April this year, Minister Angela Merkel of Germany chaired an Agency-hosted conference to "sum up" the results of various assessments and specialized meetings on the consequences of the Chernobyl accident. It attracted high-level political participation and over eight hundred experts from 71 countries and concluded with a remarkable degree of consensus, considering the many controversial issues involved.

Among the conclusions of the Conference, let me mention that there was a consensus on the early health effects clinically attributable to radiation exposure as a result of the accident. There was also confirmation of a significant increase in the incidence of thyroid cancer among children. So far, no increase could be demonstrated in the incidence of any other malignancies or hereditary effects that could be attributed to the accident. The Conference confirmed that, in the population affected by the accident, there was a high incidence of psychological disorders which cannot, however, be related to radiation exposure and are diffi-

cult to distinguish from effects associated with the economic and social hardship being experienced in the regions. The conference indicated that no sustained severe impacts on ecosystems had so far been observed. I should lastly mention that officials from the affected countries reported to the Conference on the severe economic, social and institutional consequences of the accident. The summary of the conference results—reported both in INFCIRC/510 and in a brochure—deserve wide dissemination to help build an accurate international understanding of the consequences of the accident.

Nuclear Test Sites

At the request of Member States concerned, the Agency has become engaged in the assessment of the radiological situation at three former nuclear weapons test sites.

An assessment of the *Semipalatinsk* nuclear test site has provided assurance that radiation levels in villages around the site are very low. However, it has also been concluded that lengthy human occupation of the test site itself would lead to unacceptably high radiation doses and the authorities of Kazakhstan have been advised to take steps to clean up the site or—more realistically—prevent access to it.

The habitability of the *Bikini Atoll* in the *Republic of the Marshall Islands* was assessed, in particular to determine whether the islanders, who had been evacuated from the atoll before the start of nuclear testing, could safely resume living there. The assessment, which was made by an international, scientific advisory group convoked by the Agency, concluded that if some contaminated soil was removed and if the uptake of radioactive caesium by crops were controlled through the use of special fertilizers, the *Bikini Atoll* could be re-occupied without restriction.

The third study, now underway, is of the test site at *Mururoa and Fangataufa* in *French Polynesia*. It is directed by an international advisory

committee chaired by Dr. Gail de Planque of the United States. Document GC(40)/INF/4 contains a full description of the status of this study. A final report can be expected by the end of 1997.

As the world is now hopefully putting the era of nuclear weapons testing behind it, I find it appropriate that impartial international assessments are made of whatever radiological hazards may remain from past testing.

Safeguards

The mission of IAEA safeguards to verify that nuclear material, equipment and installations are not used to “further any military purpose” has been with the IAEA from the outset, but the dimension and direction of the safeguards activities have changed considerably over time. The most dramatic development followed the obligation laid down for States parties to the Non-Proliferation Treaty (NPT) and regional nuclear weapon-free-zone treaties to place all their present and future nuclear activities and material under Agency safeguards. Some 177 States have thus legally committed themselves to conclude comprehensive safeguards agreements and 120 States have actually done so. Those States which have not yet fulfilled their obligation are from time to time reminded by the Secretariat of their duty to do so without further delay. At the present juncture we are particularly anxious that all the States parties to the Tlatelolco Treaty— notably some Caribbean States—should enter into safeguards agreements, as otherwise the full entry into force of that Treaty might be delayed. We have every reason to believe that Cuba, which has signed the Treaty, will proceed with ratification. There have already been contacts on the subject of the safeguards agreement.

With regard to two other nuclear-weapon-free zone treaties—the Pelindaba Treaty for Africa and the Bangkok Treaty for South East Asia—the Agency is preparing for verification and other tasks laid upon it. May I further mention that, as requested by the General Conference, I have continued consultations with States in the Middle East regarding the application of IAEA safeguards in

that region. A report on these efforts is before you (document GC(40)/6).

As you are aware, the IAEA is about to take a major step forward in further developing the safeguards system—a step essential to introduce new cost-effective methods and techniques and to provide vitally needed confidence that non-proliferation commitments are fully respected. This development will also help to make the safeguards system an adequate instrument that can be used to verify future nuclear arms control and disarmament measures—a need recently stressed in the report of the Canberra Commission.

At this point let me note that the traditional “safeguards statement”, contained in this and earlier years’ Safeguards Implementation Reports (SIR), that it is reasonable to conclude that “the nuclear material and other items which were *declared and placed under safeguards remained in peaceful nuclear activities or were otherwise adequately accounted for*”, is based chiefly on nuclear accountancy and inspection. Obviously, the more extensive these accountancy and inspection efforts are, the more confident we can be that the absence of evidence of diversion is due to a real absence of diversion. We believe that had Agency inspectors had access—which they did not—to some activities that took place in the declared nuclear centre at Tuwaitha in Iraq, they would have suspected that safeguards obligations were being violated. The case of Iraq also points to the conclusion that if more comprehensive information had been available about the Iraqi nuclear programme, inconsistencies would, in all likelihood, have been discovered and questions would have been prompted.

It is this experience combined with the vital interest of States in reliable safeguards that has led to the development of “Programme 93+2” and a protocol additional to comprehensive safeguards agreements, designed to give the IAEA Secretariat much more information—notably, more data from the State and more data through observations by inspectors granted wider access. Only if the available information and inspection access is sufficiently broadly based will the absence of evidence of diversion give confidence that non-proliferation commitments have not been breached. The demand of Members that safeguards must

give confidence, not only about non-diversion of declared material but also about the absence of non-declared nuclear material and installations, makes this access to more information and greater access for inspectors a high priority.

The requirements which are placed on States under the proposed additional protocol are not insignificant, but States which accepted them on a trial basis did not find them overly onerous. In any case Members will have to weigh their interest in effective verification in other States and their interest in demonstrating convincingly their own compliance with non-proliferation commitments against the burden which they may feel they are assuming by accepting such verification for themselves.

It is clear that all parties to comprehensive safeguards must be treated equally. As a result, States with large nuclear programmes will have to supply more information and allow the visit of inspectors to more sites and locations than will States with small programmes. However, the need for follow up will depend somewhat upon the quality—rather than the quantity—of the supplied information.

It is further clear that States with non-comprehensive safeguards may be able to contribute information of value for the operation of the comprehensive safeguards, e.g. regarding exports and imports. They may also help make the Agency's safeguards operations more effective and less costly by accepting in the operation of the safeguards to which they are subjected some new techniques, like environmental sampling and remote data transmission. They may further help by joining others in dispensing with visa requirements or granting multiple entry visas and accepting streamlined inspector designation procedures. However, the central rationale for strengthening safeguards verification in States with comprehensive safeguards, namely to increase confidence about their compliance with their non-proliferation pledge, is not applicable to the States with non-comprehensive safeguards—as they have made no such pledge. This being the case, it would appear appropriate, in my view, to suggest that these States accept international verification of the steps they are taking, or hopefully will be

taking, toward nuclear arms control and disarmament, for instance verification to create confidence that nuclear material released through dismantlement of weapons, is *irreversibly* transferred to the peaceful sector. This matter was explicitly raised in the Moscow Nuclear Summit and I have invited the United States and Russian Ministers present here to discuss with me the possibility of such verification by the IAEA. I should add that, at the invitation of the United States, the Agency has already performed verification of some quantities of such nuclear material.

Iraq

The Agency's ongoing monitoring and verification (OMV) activities in Iraq have, since August 1994, involved more than 600 inspections, the majority of which were conducted without prior notice. No instance of proscribed activities, or of the presence of proscribed materials or equipment have been detected.

The Agency's activities in Iraq during the past year have also involved *extensive* efforts to analyse the vast amount of documentation which was handed over to the IAEA and the UN Special Commission (UNSCOM) following the departure from Iraq, in August 1995, of the late Lt. General Kamel Hassan Al Majid. Much work has also been devoted to the follow up of procurement transactions and to assess draft versions of Iraq's re-issued "Full, Final and Complete Declaration" of its former nuclear weapons programme. A few days ago, Iraq formally transmitted its finalized version of the Declaration to the Agency's Nuclear Monitoring Group in Baghdad. As soon as we receive it in Vienna we shall start the work of verifying its completeness and correctness.

Let me add that IAEA inspectors remain in Baghdad and continue their ongoing monitoring and verification activities. In the circumstances now prevailing there, activities take place only in areas with reliable radio communications with our Monitoring and Verification Centre in Baghdad. Those of our activities which should take place away from the Baghdad region will be resumed as soon as conditions permit. Transport to and from Baghdad has been

severely affected by the recent events and the situation, with respect to the safety of our personnel in Baghdad, is being closely followed by us and the United Nations.

Democratic People's Republic of Korea (DPRK)

The Safeguards Implementation Report (SIR) for 1995 states that the IAEA remained unable to verify the initial declaration of nuclear material made by the Democratic People's Republic of Korea and that the DPRK was still not in full compliance with its safeguards agreement. This is still the case. A full report on this matter is found in document GC(40)/16.

Most recently, technical discussions between the IAEA and the DPRK took place in late June. These discussions resulted in some progress but the DPRK still did not accept various measures considered important by the Secretariat for verifying the correctness and completeness of the DPRK's initial declaration—in particular measures for the preservation of data and the provision of information about certain facilities. On the positive side, the DPRK did agree to measures to improve Agency communications from the DPRK and to accept the designation of more inspectors. A next round of technical discussions is planned to take place very soon.

Efficiency and Management

I began this statement by stressing the necessity for international organizations to be alert to the changing needs of their Members and I hope I have demonstrated how the IAEA is meeting this requirement. I also stressed the need for continuously improved efficiency in our work. I believe the IAEA has achieved a great deal in this regard. Let me give you examples:

- Despite the limitations on resources, the Agency's programme has expanded over the years to take on new activities, for example to counteract illegal trafficking in nuclear materials. Resources for such new

activities have become available both through the phasing out of some programmes and through efficiency gains. This process continues: the budget for 1997 assumes substantial cuts in overhead costs and provides an increase of some US \$10 million in programmatic activity;

- Systematic evaluation of programme performance is now in routine use as an important tool for increasing efficiency. In addition, the independent external auditors help to identify shortcomings in efficiency and the internal audit and management services, which work to the same objective, are being strengthened;
- The IAEA makes increasing use of efficient modern information technologies: for the compilation and dissemination of data; for the better management of the many projects in the TC programme; for the processing and analysis of the vast amounts of safeguards data; and for financial and personnel administration. The Agency has an extensive home page on Internet—where, for instance, all professional posts are advertised. Our official documentation is becoming available on-line to Missions and Governments—which improves efficiency. Apart from that, IAEA documents becoming available on-line to the public enhance transparency. Through a recent decision these documents will now comprise also most Board documents which are more than two years old and which were earlier restricted;
- Good staff and good staff management are crucial to both programme delivery and efficiency. The paramount consideration in the choice of staff must remain “efficiency, technical competence and integrity” and I am pleased to report that these qualities continue to characterize our staff and that management-staff relations are healthy and founded on mutual respect. The change in the staff composition over the last 15 years has been considerable. In 1981, when the first Resolution on the “Staffing of the Secretariat” was under discussion, a number of Members proposed

that a target of 33% be set for the representation of developing countries on the professional staff. Today, 32.5% of the Agency's staff comes from developing countries. However, the number of professional women while steadily increasing is still far from adequate. Even though representation has doubled since 1981, it stands at only 18%. We will continue our efforts to improve the situation.

Let me conclude by stressing that Member States can contribute in a number of ways that are crucial to making the IAEA even more efficient and responsive to their own changing needs. I shall cite only two:

- Effectively interacting and co-operating with other Member States and with the Secretariat to achieve the desired results of the many programmes and activities which form the substance of the Agency's work;
- Paying their contributions to the Regular Budget as well as to the Technical Assistance and Co-operation Fund in full and on time. Late or limited payments jeopardize programmes and efficiency and undermine the reliability of the Agency as a provider of essential services, e.g. in the areas of radiation protection, nuclear safety and safeguards.

In the Secretariat we are proud of the good reputation of the IAEA. We feel the Agency could play an even greater role in responding to the needs of its Members in the future.

Let me end with my traditional thanks to the Government of Austria and the City of Vienna for their help and support.



XA9743339

Statement to the 51st Session of the United Nations General Assembly

Mr. President, It is an honour for me, on the occasion of the submission of the Annual Report of the IAEA for 1995, to address the General Assembly and give an up-to-date account of the activities and concerns which engage the IAEA.

One hundred years ago the French Professor, Henri Becquerel, discovered radioactivity. Some fifty years later—at the end of the Second World War—two nuclear bombs were launched over Japan demonstrating the destructive power of nuclear energy. Ten years later the peaceful potential of nuclear energy came to the fore at the First International Conference on the Peaceful Uses of Atomic Energy at Geneva. Much of the secrecy which had surrounded nuclear science during and after the War was lifted, which led to widespread optimism about the potential benefits of the various uses of nuclear energy.

Since then a nervous world has watched the belligerent atom during some 2000 nuclear weapons' tests and a nuclear armaments race. In the same period there has been rapid development and deployment of the beneficial uses of nuclear energy to generate electricity, to combat cancer and help diagnostics, to improve food production and to measure and reduce pollution—to mention but a few uses.

Throughout this period the IAEA has served Member States by helping to compile nuclear-relevant data, to disseminate knowledge and know-how about peaceful uses of nuclear energy, to draft common radiation protection and other safety standards and to verify that nuclear material under international safeguards is used only for peaceful purposes.

Over time the work of the Agency has both expanded and changed considerably. Governmental involvement in the promotion of nuclear science has given

way somewhat to emphasis on regulatory work in the fields of safe use of nuclear installations and safe disposal of nuclear waste. A similar change of emphasis has occurred also in the IAEA. While some of the provisions of the IAEA Statute concerning ownership and operation of nuclear installations, e.g. for the storage of plutonium, may have been overambitious and remain unused so far, the rule of the Non-Proliferation Treaty obliging parties to submit all their present and future nuclear activities to IAEA safeguards has resulted in a sizeable verification activity of growing importance. Development co-operation, based both on the IAEA Statute and called for under the NPT, has similarly become a large activity. However, UNDP financing which was once a large source of funding for the IAEA technical cooperation has now become a minor source. Moreover, the orientation of programmes has shifted somewhat from basic nuclear science and technology to projects with more direct impact on sustainable development—increased food production, identification of water resources, eradication of insect pests, development of new plant mutants, etc.

As the world changes and the problems facing governments change, inter-governmental organizations, which are their joint tools, must also change. Moreover, unforeseen events influence the agendas of governments and this is reflected also in the agenda of the IAEA. Suffice it to mention the names Three Mile Island and Chernobyl, Iraq and the DPRK, Semipalatinsk and Mururoa, to evoke the growing engagement of the IAEA in the fields of nuclear safety, safeguards verification and assessment of the radiological situation at nuclear weapons test sites.

Change is occurring also in the methods and techniques used by the IAEA to fulfil its functions. Information compiled by the Agency from Member States, e.g. on the operation of nuclear installations, is now processed electronically and often made available on line not only to Member Governments but to all interested parties. To take an example, INIS, or the International Nuclear Information System, is a truly international bibliography of material published in the nuclear field. It is available on line. I might further mention that although meetings of the Agency's Board of Governors are closed and the records

restricted, under a recent decision practically all Board documentation older than two years is declassified and will soon be available to all on line. In addition, a home page on the Internet now offers a wealth of information about the Agency and its current work. In the safeguards field, the control of nuclear material is being made more effective and efficient by the use of remote monitoring and automatic transmission of data. Another innovation is a direct line between the Secretary-General of the United Nations and myself to ensure rapid communication in case of a crisis. The Agency has also indicated its readiness to have a televised link to the Security Council to enable the Council to be briefed at any time without delay. So far the need has not been felt for this but a practice of informal briefings for the Council is developing thus ensuring close liaison between the nuclear inspection arm of the UN System and the enforcement organ.

It is possible that continuous change and adaptation have been made easier within the IAEA by the practice of the Agency of rotating most professional staff. Long-term serving staff are most valuable for stability, experience and institutional memory, but for flexibility in programming, for awareness of current problems in the field and their possible solutions and for innovation, a steady inflow and outflow of professional staff has proved helpful in the case of the IAEA.

There is no lack of new challenges in the nuclear sphere and Member Governments would want the organization to respond to many of these. The problem is that the zero real growth policy, combined with the difficulty of abandoning existing essential programmes and of making sufficient resources available through economies, limits what can be tackled. Many new tasks, e.g. measures countering illicit trafficking in nuclear materials or ad hoc projects concerning nuclear safety and waste are, in fact, handled in large measure on the basis of extrabudgetary voluntary contributions. This is not satisfactory but far better than inaction.

Let me now turn to some of the challenges currently facing the IAEA.

Energy and the Environment

With the nuclear arms race over, a number of nuclear arms control or disarmament treaties have been concluded or are in the making. I shall soon address the verification tasks which this may place on the IAEA, but at this point I would like to pose the important question whether putting the evil genie of the belligerent atom back into the bottle will contribute to a more general acceptance of the peaceful uses of nuclear energy, in particular exploitation of the potential for the generation of electricity and heat. It is too early to know the answer, but it is not too early to recognize its importance.

Among the vital issues facing the world is the risk of global warming caused by excessive emissions of some gases, linked in large measure to energy use, notably carbon dioxide and methane. The Framework Convention on Climate Change, signed at the Rio Conference in 1992, did not specify how the risk is to be met. While the UN System has at its disposal a group of prominent scientific experts in climatology—the Intergovernmental Panel on Climate Change (IPCC)—which examines the problems, probability and causes of climate change, the system does not have any single organization providing impartial expert data and analysis of different sources of energy. As a result some of the energy scenarios designed by the IPCC, in response to the risk of global warming, are questioned by outside energy experts.

At the IAEA the goal of sustainable development is fully accepted and it has been considered important that *all* energy sources be impartially and scientifically analysed for their impact upon life, health and the environment, including climate. For this reason co-operation has been sought with several other international organizations in a joint project—named DECADES—dealing with electricity generation. The project develops methods and software through which individual countries are able to assess and compare the health and environmental impact—as well as cost—of different ways of generating electricity, taking into account the full cycle—e.g. from the extraction of fuel to the disposal of waste. Not surprisingly, these analyses show that the fossil fuels—coal, oil and gas, in

this order—are at the top of the scale of energy sources contributing greenhouse gases—particularly carbon dioxide—while nuclear power and renewable sources of energy contribute the least greenhouse gases emissions. These findings are entirely consistent with the experience reported by Mr. Priddle, the Head of the International Energy Agency (IEA) of the OECD, at the Second Conference of the Parties to the Framework Convention on Climate Change in Geneva last summer, namely that, I quote:

“nuclear power accounted for the greater part of the lowering of the carbon intensity of the energy economies of the OECD countries.”

There should now be a general awareness among governments that an expanded use of nuclear power and of renewable sources of energy together with conservation measures could significantly help to restrain greenhouse gas emissions. Regrettably, this has not yet led to common conclusions at the global level. A few governments—in Japan, the Republic of Korea, China and in Eastern Europe—expressly refer to environmental concerns in explaining their expanded use of nuclear power. However, at present most countries are continuing to expand their use of fossil fuels and are failing to meet the targets which they have set for themselves to restrain their emissions of greenhouse gases. There is a regrettable gap between the rhetoric of restraint and the reality of growing greenhouse gas emissions.

The reason why nuclear power expansion is not very actively discussed by most governments—despite its significant potential as a response to the risk of global warming—lies in the controversy which surrounds this source of energy in many industrial countries. Although nuclear arms control and disarmament will eliminate one past common concern, others remain—notably regarding safety in nuclear power operation and safety in nuclear waste disposal and illicit trafficking in nuclear materials. The IAEA is actively engaged in all these subjects.

Nuclear Safety

The accident at Chernobyl in 1986 had very serious consequences for human health and the environment and a major negative impact on the further expansion of nuclear power. This makes it all the more important that all the lessons be drawn that can be drawn from this tragic event. On the tenth anniversary of the accident the IAEA, the World Health Organization and the European Commission co-sponsored an international conference last April to “sum up” the results of the various assessments made and specialized meetings held on the consequences of the accident. It attracted the participation of over eight hundred experts from 71 countries and concluded with a remarkable degree of consensus. Among the conclusions was a confirmation of a significant increase in the incidence of thyroid cancer among children born before and within some months after the accident. No increase in any other form of cancer has been identified. The social and psychological consequences of the accident combined with the consequences of the political and economic changes have been severe. At the technical level renewed attention must be paid to the “sarcophagus” around the destroyed reactor. The question of the closure of the whole Chernobyl plant needs also to be conclusively settled.

Moscow Nuclear Safety and Security Summit

A Summit of eight States on Nuclear Safety and Security was held in Moscow on 19-20 April this year resulting *inter alia* in recognition of the importance of nuclear power as an energy source which is consistent with the goal of sustainable development and in commitments to an international nuclear safety culture as well as to strengthening the IAEA safeguards system. Needless to say, this attention at the highest levels to nuclear matters is of great importance as guidance both to those working in the nuclear sphere and to the general public.

Conventions Relevant to Nuclear Safety

Last week on United Nations day, 24 October, the IAEA Convention on Nuclear Safety entered into force. While recognizing that national authorities

have the responsibility for supervising the safety of nuclear power plants, this Convention lays down a number of basic principles which must be respected. It also provides a procedure under which the parties are obliged to submit reports on the safety of nuclear power plants on their territory and accept review of these reports by other States.

In the coming year three new legal instruments relevant to safety are expected to be finalized. A new convention will contain basic rules concerning the safe management, including disposal, of radioactive waste. Like the Convention on Nuclear Safety it will oblige parties to submit periodic reports on implementation and to accept review of them by States parties. Other instruments will bring about a revision of the Vienna Convention on Civil Liability for Nuclear Damage and an arrangement for supplementary funding.

The development of conventions and other legal instruments and standards, together with a variety of international services and assistance programmes and heightened national attention to nuclear safety, help to establish the international nuclear safety culture to which the participants in the Moscow Summit committed themselves. Results of the efforts to strengthen nuclear safety can be seen in the reduced number of unplanned stoppages in nuclear power plants around the world.

Non-Power Applications of Nuclear Techniques

Before I move on to discuss the IAEA's various tasks relating to the belligerent atom I must touch briefly on the Agency's work to disseminate nuclear techniques to developing countries. I referred in my introduction to the changes that have occurred in the IAEA's programme of development co-operation and in particular the shift in emphasis from basic research to projects which promote sustainable development and benefit the end user—e.g. the cancer patient or the farmer. I am pleased to report also that by raising the level of ambition and through better management it has been possible to reach record high levels of programme delivery. Let me give but two examples of projects, both in Africa.

Water resources management is essential for sustainable development and isotope hydrology techniques have unique capabilities to trace and map water resources so that best use can be made of them. Within a major regional project in Africa the IAEA is helping to apply these techniques. For instance, the Moyale region in South Ethiopia, covering 45 000 km², which has three million inhabitants and one of the largest cattle herds on the continent, depends entirely on scarce groundwater resources. Isotopic data have now made it possible to distinguish between renewable and non-renewable water resources, leading to better estimates of the total sustainable capacity for meeting water requirements in this region.

The other example which I want to mention relates to the use of radiation in the eradication of some insect pests that affect food production and health. The sterilization of certain insects, like the Mediterranean fruit fly and the tsetse fly, and the release of large quantities of sterile males makes it possible, after campaigns with conventional means, to actually *eradicate* an insect pest. Thus, through a major effort by the IAEA and the FAO a few years ago, the new world screwworm was eradicated in Libya. Right now the focus is on a very promising project to eradicate the tsetse fly from Zanzibar in Tanzania, thereby permitting better cattle rearing on the island. The aim is complete eradication before the end of 1997. The expected successful outcome is likely to stimulate similar projects in some larger sites in Africa.

IAEA Verification of Arms Control and Disarmament Agreements

I turn now to the growing role of the IAEA to help prevent a further spread of nuclear weapons and to verify nuclear arms control and disarmament agreements.

The most important event in this field during the past year was undoubtedly the recent adoption by the General Assembly of the convention prohibiting all nuclear weapons tests. Although there was considerable discussion during the negotiations in Geneva about the possible financial and other advantages of

using the IAEA to run the verification activities under the CTBT and to provide the Secretariat, the solution eventually adopted was a small separate organization to be located in Vienna. At this juncture it is difficult to know whether simple co-location, welcome as it is, will offer much by way of synergy. While there is some uncertainty about the formal entry into force of the CTBT, it is worth noting that all non-nuclear-weapon States parties to the NPT are already obliged under the NPT not only to refrain from nuclear weapons tests, but also from preparing for such tests and the IAEA has the duty to verify in these States that these obligations are respected.

Comprehensive Safeguards

The dominant verification task of the IAEA consists in the operation of comprehensive safeguards under the NPT and nuclear-weapon-free zone treaties. The 180 non-nuclear-weapon States now party to the NPT have committed themselves to conclude comprehensive safeguards agreements with the IAEA. I regret to report that, despite periodic reminders, over 50 of these States have yet to do so.

Treaties establishing nuclear-weapon-free zones are increasing in number and play an important role consolidating commitments to non-proliferation on a regional basis and providing specific supplementary arrangements and undertakings responding to needs of the particular region. All rely on the IAEA for verification. The Tlatelolco Treaty for the Latin American and Caribbean region will hopefully enter into force for its entire zone of application during the next year.

The Pelindaba Treaty, signed in Cairo last April—and establishing a Nuclear-Weapon-Free-Zone for Africa—goes further than the NPT. For example, it prohibits any armed attacks against nuclear installations.

Similarly, the South East Asia Nuclear-Weapon-Free-Zone Treaty, signed in Bangkok last December, goes beyond non-proliferation and deals also with

issues of nuclear trade, nuclear safety and radioactive waste.

A nuclear-weapon-free zone for the Middle East has been on the agenda of the United Nations and of the IAEA for a number of years. The General Conference of the IAEA has requested me to consult with countries in the region concerning the verification issues linked to such a zone. From my many discussions in the region I conclude that existing comprehensive safeguards, alone, will not suffice as means of verification. Most likely some combination of international and regional or bilateral arrangements will have to be worked out. I have been requested to convene a second workshop on these verification issues in 1997 and I shall do so.

The Agency's verification of Iraq's compliance with its obligations under Security Council resolutions has, since August 1994, involved more than 600 inspections, the majority of which were conducted without prior notice. These inspections, plus the analysis of the vast amount of documentation handed over to the IAEA and UNSCOM after the departure of the late Lt. General Hussein Kamel Hassan Al-Majid and the follow-up of procurement transactions, are part of the assessment of Iraq's re-issued "full, final and complete declaration" of its former nuclear weapons programme. The carrying out of joint IAEA-UNSCOM multi-disciplinary inspections at weapons capable sites contributes to the effectiveness of the ongoing monitoring and verification programme for the detection of any attempt by Iraq to conduct activities proscribed by the Security Council resolutions.

In the case of the Democratic People's Republic of Korea, the information and access provided to us have been and remain insufficient for a comprehensive picture of the nuclear programme and questions remain about the completeness of the initial declaration of nuclear activities. Although present verification arrangements give confidence that nuclear installations subjected to a freeze under the Agreed Framework between the United States and the DPRK, are actually frozen, confidence about the DPRK's compliance with its non-proliferation commitments under the NPT can only come about through more informa-

tion and full implementation of the safeguards agreement.

A considerable strengthening of NPT-type safeguards became acceptable and was, indeed, demanded by most governments after the discovery of clandestine nuclear weapons activities in Iraq. In particular, greater assurance was sought about the absence of non-declared nuclear material and activities related to such material. It was clear that such assurances could only be obtained by giving the IAEA access to more information, by allowing inspectors greater access to relevant sites and by the introduction of new techniques, such as the analysis of environmental samples.

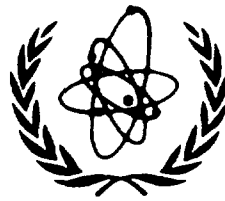
Many of the measures contemplated have been introduced under the authority given to the Agency under existing comprehensive safeguards agreements. For the introduction of measures which may go beyond the authority given in these agreements, an additional draft protocol has been worked out by the Secretariat and is now the subject of discussion in a Committee under the Board of Governors. Most of the measures now discussed have been tried out in several industrialized States without great problems for the Agency or the State concerned. Although these measures will in the long run bring efficiency gains and be cost neutral, it is inevitable that they will also add some burden and inconvenience to the inspected party. Regrettably, as we all know from our experience of controls at airports, security against possible violations by a few requires some inconveniencing of many.

One of the objections currently raised to the proposed strengthened safeguards system is that it unfairly exempts nuclear-weapon States from measures which are seen as burdensome by some of the non-nuclear-weapon States required to accept them. As disarmament progresses such inequality of burden should diminish. Verification in States which still have nuclear weapons obviously cannot aim at establishing the absence of nuclear weapons—which is the purpose of the strengthened safeguards system! However, verification in nuclear-weapon States could aim at providing assurance that fissionable material from dismantled weapons does not go into *new* weapons and that a “cut-off” agreement prohibiting the production of plutonium or highly enriched uranium for weapons use is respected.

A “cut-off” agreement remains to be negotiated. Meanwhile the United States and Russia are, in fact, dismantling nuclear weapons and the Moscow Nuclear Safety and Security Summit last April endorsed the idea of IAEA verification that material from dismantled weapons and other military stocks remain in peaceful storage or use. The IAEA is, in fact, already safeguarding some such material in the United States and Russia appears willing to accept similar inspections in due course. At a recent tri-lateral meeting of the Russian Minister of Atomic Energy, the US Secretary of Energy and myself on the occasion of the IAEA General Conference, it was agreed jointly to explore technical, safeguards-related and financial issues which are connected with such verification. It is my hope that we are here witnessing the first steps toward verification of nuclear disarmament.

One final word of caution is needed after this optimistic note: even with a keen eye on efficiency, the management of multilateral nuclear co-operation including verification of arms control and disarmament, requires resources—well-qualified personnel, state of the art equipment, etc. Without adequate funding such personnel cannot be recruited or retained and the purchase of advanced cost-effective equipment would be curtailed.

In concluding let me express appreciation to the Government of Austria for its continued support to UN system organizations in Vienna.



International Atomic Energy Agency

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THE INTERNATIONAL ATOMIC ENERGY AGENCY SHALL SEEK
TO ACCELERATE AND ENLARGE THE CONTRIBUTION OF ATOMIC ENERGY
TO PEACE, HEALTH AND PROSPERITY THROUGHOUT THE WORLD.
IT SHALL ENSURE, SO FAR IT IS ABLE, THAT ASSISTANCE PROVIDED
BY IT OR AT ITS REQUEST OR UNDER ITS SUPERVISION OR CONTROL
IS NOT USED IN SUCH A WAY AS TO FURTHER ANY MILITARY PURPOSE.

(Article II of the Statute)

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