

## Peaceful nuclear development must continue

Applying new measures of restriction and denial of access with a view to preserving nuclear materials and peaceful nuclear technology exclusively for certain countries would be the wrong and short-sighted approach to non-proliferation, according to the Agency's Director General.

Addressing the IAEA Board of Governors on 6 July, on the aftermath of the Israeli raid on Iraq's nuclear research centre, Dr Eklund spoke of his fear that just such an approach to non-proliferation might be stimulated by recent events. He personally was convinced that the right attitude was for Member States and the Agency — in the words of Article III.A.1 of the IAEA Statute — “to encourage and assist research on, and development and practical application of, atomic energy for peaceful uses throughout the world”, at the same time of course, applying appropriate safeguards.

It is of fundamental importance, Dr Eklund stated, to reach as soon as possible a universal acceptance of the NPT or the concept of full-scope safeguards, and to strengthen further the Agency's safeguards. He had earlier told the Board, on 9 June, that from a point of principle the Israeli attack on Iraq's nuclear research centre was also an attack on the Agency's safeguards. At its June meeting, the week after the Israeli attack, the Board of Governors held a special debate on the subject and passed a resolution reaffirming its confidence in the Agency's safeguards system. Dr Eklund's assessment of the attack, and the Board's confidence in safeguards, were later echoed by the UN Security Council which considered that the attack “constituted a serious threat to the entire IAEA safeguards regime which is the foundation of the non-proliferation treaty”.

The Israeli air-force attack on Iraq's nuclear research centre at Tuwaitha near Bagdad took place on 7 June. In his address to the IAEA's Board of Governors on 9 June the Director General pointed out that Iraq, a party to the NPT since 1970, had accepted Agency safeguards on all its nuclear activities and, at the last inspection in January, all nuclear material had been satisfactorily accounted for. The military attack had been by a nation that was not party to the NPT.

The resolution passed by the Board\* was transmitted to the UN Security Council which was also considering

\* The text of the resolution passed by the IAEA Board of Governors on 12 June appears on page 7 of this issue.

the matter, and which invited Dr Eklund to address its meeting on 19 June. In his statement, the Agency's Director General briefed members of the Security Council on the report that he had made to the IAEA's Board of Governors and brought them up-to-date with events:

“I considered it my duty to report immediately to the Board of Governors of the Agency on this air attack, which is a source of grave international concern. In my statement at the opening meeting of the Board, on 9 June, I informed the Board that, according to the Agency's records, the following nuclear facilities exist in Iraq:

- IRT-2000, 2 MW(th), pool-type, light-water-moderated research reactor, using fuel with 10%, 36% and 80% enriched uranium. This reactor was supplied by the Soviet Union and came into operation in 1967. Agency inspections started in May 1973 following Iraq's adherence to the NPT and the subsequent conclusion of the required safeguards agreement. Since then periodic inspections, the last of which was in January 1981, revealed no non-compliance with the safeguards agreement;
- Tamuz-1 and Tamuz-2 reactors, which are of the Osiris type. Tamuz-1: 40 MW(th) tank-pool research reactor. Tamuz-2: 500 kW(th) research reactor is associated with the Tamuz-1 reactor. The fuel of these reactors has 93% enriched uranium. These two reactors have been supplied by France. The construction of the reactors was first inspected by Agency safeguards inspectors in September 1979. An initial quantity of fuel, containing about 12 kg of uranium, was delivered in June 1980 and inspected upon arrival. This fuel was inspected the last time in January 1981. These inspections revealed that no nuclear material was missing;
- Separate storage where natural and depleted uranium is stored. The storage was last inspected in January 1981 and all material was accounted for.

All these facilities and fuel are located at the Tuwaitha research centre and, as indicated above, are covered by Agency safeguards under the Non-Proliferation Treaty safeguards agreement between Iraq and the Agency. The task of the Agency in the

implementation of safeguards is to verify that no safeguarded nuclear material is diverted from peaceful purposes. To this end the Agency develops for each facility under safeguards an approach for detecting, by accountancy and inspection at the facility, an anomaly which would indicate diversion, i.e. the absence of nuclear material which cannot be properly explained.

In a research reactor of the type in question, two diversion strategies are technically possible and therefore have to be countered. The first consists in removing fuel elements and extracting the highly enriched uranium. Safeguards operations therefore in the first place have to ensure that fuel elements supplied from abroad are checked on arrival and that from that moment on continuity of knowledge is maintained regarding their location and integrity. The primary measures used for this purpose are counting of the fuel elements and their identification in order to detect dummies. The design of the facility and of the fuel elements is such that it provides assurance that the diversion of fuel elements would be detected easily.

The second possibility of diversion in a research reactor of the type in question is based on the undeclared production of plutonium. As the fuel elements consist of highly enriched uranium, only very small quantities of plutonium can be produced in them, and, of course, this plutonium would be under safeguards. Larger quantities of plutonium, perhaps up to the order of one significant quantity (8 kg) per year, could only be produced if the core of the reactor were in addition surrounded by a blanket of fertile elements made of natural or depleted uranium. The size and location of this blanket would certainly be such that ordinary visual inspection would reveal its presence.

It has been stated by the Israelis that a laboratory located 40 metres below the reactor (the figure was later corrected to four metres) which allegedly had not been discovered by IAEA inspectors was destroyed. The existence of a vault under the reactor which apparently has been hit by the bombing was well known to the inspectorate. This vault contains the control rod drives and has to be accessible to the staff for maintenance purposes. In order to protect the staff from radiation, the ceiling of the vault consists of a thick concrete slab which in turn is lined with a heavy steel plate, and therefore this space could not be used to produce plutonium.

Mr President, Iraq has been a party to the Non-Proliferation Treaty since it came into force, in 1970. In accordance with the Treaty, Iraq accepts Agency safeguards on all its nuclear activities. These safeguards have been satisfactorily applied to date, including during this period of armed conflict with Iran. The last safeguards inspection at the Iraqi

nuclear centre took place in January of this year, and, as I stated earlier, all nuclear material was satisfactorily accounted for. This material included the fuel so far delivered for the Tamuz reactors. Another regular safeguards inspection had been planned by the Agency for early June, but, taking into account the Board of Governors' and other meetings scheduled to be held in Vienna during the first part of June, it was postponed until the end of the month. In view of the attack it was decided to advance the date of inspection. The members of the Security Council will be interested to learn that Agency safeguards inspectors left a few days ago for Baghdad for the inspection of the Iraqi nuclear research centre. They returned today. According to a telephone conversation which I had early this morning with the Deputy Director General for Safeguards, the inspectors were not able to approach the damaged storage facility because of suspected unexploded bombs. The Iraqi Government, however, suggested that the facility be inspected anyway on the condition that the inspectors sign a waiver removing all responsibilities from the Iraqi Government. The inspectors were not in a position to do this.

Mr President, as I observed in my statement to the Board of Governors of the Agency, this attack on the Iraqi nuclear research centre is a serious development with far-reaching implications. The International Atomic Energy Agency, since its establishment, has not been faced with a more serious matter as the implications of this development. The Agency's safeguards system was conceived as and is a basic element of the Non-Proliferation Treaty. The same system of safeguards is applied to facilities covered by the Tlatelolco Treaty and facilities under bilateral safeguards agreements with the Agency.

The Agency's safeguards system is the product of extensive international co-operation. Its basic principles and *modus operandi* were devised, and are constantly upgraded, by foremost international experts in that field. Results of the application of the system are periodically reviewed by the Board of Governors and the General Conference and have not been found wanting. Its application is extremely wide. By the end of 1980 approximately 98% of the nuclear facilities of which the Agency was aware outside the nuclear-weapon States were under Agency safeguards.

In fulfilling its responsibilities the Agency has inspected the Iraqi reactors and has not found evidence of any activity not in accordance with the Non-Proliferation Treaty. Nevertheless, a non-NPT country has evidently not felt assured by our findings and by our ability to continue to discharge our safeguarding responsibilities effectively. In the interest of its national security, as was stated by its leaders, it has felt motivated to take military action. From a

point of principle, one can only conclude that it is the Agency's safeguards system which has also been attacked. This, of course, is a matter of grave concern to the International Atomic Energy Agency and has to be pondered well."

After its own debate the Security Council passed a resolution\* strongly condemning the Israeli attack and urging Israel to place all its nuclear facilities under IAEA safeguards.

On 6 July, the Director General addressed another Board meeting, this time analysing the long-term implications for non-proliferation and for the Agency, as well as reporting on the most recent developments in the affair. Dr Eklund started by recalling that safeguards inspectors had visited the Iraqi nuclear research centre on 18 June, but had been unable to inspect the fuel for the Tamuz reactors because of suspected unexploded bombs. There was some progress, however:

"The inspectors visited the IRT-2000 reactor which was not damaged and the storage containing natural and depleted uranium and yellow-cake and observed no changes since the last inspection. The inspectors requested the Iraqi authorities to submit a special report and to keep the IAEA informed on the progress made in clearing up the reactor site. The Iraqi authorities have agreed that the inspection will be resumed as soon as the Tamuz reactors and specifically the highly enriched uranium fuel storage are physically accessible. The Secretariat is in contact with the Iraqi authorities on this matter.

Now, I should like to turn to another development which has been the subject of comments in the press and which involves the conduct of a safeguards inspector of the Agency, Mr Roger Richter. Mr Richter joined the Agency on 24 February 1978 and was initially attached to the Euratom Section. Since 16 March 1979, he has been attached to the South and South East Section which covers *inter alia* Israel and Iraq, but he was not designated as an inspector for Iraq. He last attended for duty in the Agency's Headquarters on 15 June. On 18 June, a telex was received from him from Washington stating, 'I hereby resign my position as nuclear safeguards inspector for the IAEA effective June 16 1981'. On the same day, i.e. 18 June, Senator Alan Cranston stated before the United States Senate Foreign Relations Committee that he had 'received four revealing internal documents from American sources within the International Atomic Energy Agency' and on 19 June, Mr Richter appeared before the US Senate Foreign Relations Committee and testified questioning the effectiveness of the Agency safeguards system in general as devised in connection with NPT,

and in particular its effectiveness in detecting clandestine undeclared production of plutonium in the Osiris type of research reactor. Prior to that date, he had supplied to the United States Mission in Vienna a document containing confidential safeguards information. An investigation made in the Secretariat indicates that Mr Richter is guilty of breach of several Staff Regulations and Rules, the most serious violations being of Staff Regulations 1.01, 1.05 and 1.06

On the basis of the advice I have received from the Director of the Legal Division, I have accordingly on 2 July decided to summarily dismiss Mr Richter from the Agency's service on grounds of serious misconduct and this decision has been communicated to him by telex, followed by letter.

Apart from the breach of Agency Rules and Regulations, the misconduct of Mr Richter raises some fundamental issues concerning the security of confidential information received from Member States. I can well appreciate the serious concern of the Member States which I fully share. The confidentiality of information relating to safeguards is basic to the whole philosophy of the Agency's safeguards operation. We have now about 130 inspectors from some 40 countries engaged on inspections in some 50 countries. This is a serious case of unauthorized supply of information and violation of the trust placed in the integrity of a safeguards inspector in his capacity as an international civil servant of the Agency.

I deeply regret this and I have given instructions for an urgent in-depth review of the whole pattern of security and confidentiality of all safeguards material and documentation. I would like to assure the members of the Board that no effort will be spared to ensure that in our safeguards security arrangements, as far as humanly and technologically possible, safeguards confidentiality is fully preserved. I hope that this singular episode of misconduct would not give rise to a new strain in the acceptance by Member States of safeguards inspectors on grounds of nationality and further complicate the process of designation of safeguards inspectors in future.

May I now invite the Board's attention to my statement of 12 June, in which I indicated that in a research reactor of the Osiris type two diversion strategies are technically possible and have to be countered in the safeguards measures adopted.

The first involves removing fuel elements and extracting the highly enriched uranium. The necessary measures to counter this strategy consist of item counting and identification and measurement of the enrichment of the fuel. The safeguards inspections at the Iraqi Nuclear Research Centre, which have taken place up-to-now have implemented exactly this approach. This inspection frequency chosen is adequate during the period before the reactor comes

\* The text of the UN Security Council resolution, passed on 19 June, can be found on page 7 of this issue

into operation and the amount of highly enriched uranium on site is less than one significant quantity (25 kg highly enriched uranium). In accordance with the facility attachment worked out in the autumn 1980, the Agency would increase the inspection frequency as necessary when the amount of enriched uranium exceeds one significant quantity.

The second possible diversion strategy is based on the undeclared production of plutonium by means of neutrons from the core of the reactor. Production of a significant quantity of plutonium (8 kg) would require the introduction of considerable amounts of natural or depleted uranium into the reactor in form of fertile elements. Further, the use of a research reactor of this type for plutonium production would call for operation of the reactor at full power over sustained periods of time.

The safeguards measures necessary to counter this diversion strategy must focus on detecting fertile materials within and around the core and on the mode of operation of the reactor. The first anomaly would be detected by visual observation supported by optical surveillance in the absence of inspectors and, if necessary, measurements. Frequent refuelling with highly enriched fuel would easily be established by accountancy and would depend on additional fuel supply. It would also become known to the inspectorate in advance through notification by the supplier.

The arrangements necessary to implement these measures have been foreseen in the relevant draft facility attachment and in the normal course, would have been applied when the reactor went into operation. That is to say, with the commencement of the operation, the reactor would become subject to a more rigorous inspection regime with more intensive inspection and safeguards measures being applied as appropriate to the operational mode. One must keep in mind the two distinct stages, namely, the pre-operational and the operational.

There was thus nothing wrong with the safeguards being applied on the Tamuz reactors nor any deficiencies in the inspection schedule or procedures. One should also bear in mind that, in this particular case, there is the additional factor of the precautionary measures taken also by the supplier of the plant for its safety.

It was with these considerations in mind that I was able to inform the Board, on 12 June, that in a reactor of this type, diversion of fuel elements or undeclared plutonium production would be detected with very high degree of probability.

The Agency's safeguards system is being constantly reviewed and upgraded. The Safeguards Implementation Report which was considered by the Board last month analysed in some detail particular problem

areas. They involve the implementation of safeguards by the Agency, co-operation by Member States and operators in implementing safeguards, and the resources required for the continued development and effective implementation of our safeguards system. The Agency will do its best to secure the effectiveness of the safeguards system; however, the continued support of the Board and Member States is indispensable for the success of these efforts.

The incident in Baghdad prompts us to reconsider an important question of principle, viz. are there certain areas of scientific or technical research and development for the peaceful uses of nuclear energy which Member States are not supposed to include in their programmes?

Both the Agency's Statute and the NPT are clear on this point and pre-suppose the establishment and administration of safeguards to ensure that military purposes are not furthered and that, at the same time, economic and technological development in the field of peaceful nuclear activities is not hampered.

There is a well known saying that knowledge — once given away — cannot be retracted. Attempts to exclude certain areas of research and development has a way of inevitably attracting increased interest in the same areas. We have a classical example of this in the short history of atomic energy, namely, the methods and technologies used for the separation of uranium isotopes. The secrets of these methods and associated technical details which have been strictly guarded over the years have become the object of a constant and vivid interest leading, as we know, to new methods being developed independently in several countries, and resulting even in commercial organizations being set up to market the products.

I draw your attention particularly to this because I am afraid that, following the Baghdad incident, there may be renewed attempts to impose new restrictions and constraints on certain areas of peaceful nuclear technology with a view to preserving them exclusively for certain countries.

I am personally convinced that the right attitude is that the Member States and the Agency should continue — and I quote the Statute again, Article III.A.1 — 'to encourage and assist research on, and development and practical application of, atomic energy for peaceful uses throughout the world', at the same time, of course, applying appropriate safeguards. This also underlines that it is of fundamental importance to reach as soon as possible a universal acceptance of the NPT or the concept of 'full-scope safeguards' and to further strengthen the Agency's safeguards.

This, in my view, is a correct and far-sighted approach rather than applying new measures of restrictions and denial — much less resorting to military action."

## Text of resolution adopted by IAEA Board of Governors

The Board of Governors

Recalling that according to Article II of the Statute the Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world,

Recalling further that according to Article 2 4 of the Charter of the United Nations 'All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations',

Recognizing the inalienable right of all Member States of the Agency to develop nuclear energy for peaceful purposes, to further their scientific, technological and economic development,

Mindful of the fact that Iraq fully subscribes to the Agency's safeguards system and is a Party to the Treaty on the Non-Proliferation of Nuclear Weapons,

Noting the statement of the Director General to the effect that Iraq has fulfilled its obligations under Agency safeguards pursuant to the Non-Proliferation Treaty to the satisfaction of the Agency,

Informed that on 7 June 1981 Israel carried out a military attack on the Iraqi Nuclear Research Centre damaging the nuclear facilities and causing loss of human life,

Conscious that this military action besides affecting the security and peace of the region has shown clear disregard for the Agency's safeguards regime and the Non-Proliferation Treaty and could do great harm to the development of nuclear energy for peaceful purposes, and

Gravely concerned by the far-reaching implications of such a military attack on the peaceful nuclear facilities in a Member State,

- 1 Strongly condemns Israel for this premeditated and unjustified attack on the Iraqi Nuclear Research Centre, which is covered by Agency safeguards,
- 2 Recommends to the General Conference at its forthcoming regular session to consider all the implications of this attack, including suspending the exercise by Israel of the privileges and rights of membership,
- 3 Reminds the Member States of the Agency of the UN General Assembly Resolution No. 35/157 calling for an end to all transfer of fissionable material and nuclear technology to Israel,
- 4 Recommends that the General Conference suspend provision of any assistance to Israel under Agency's technical assistance programme,
- 5 Urges the Agency's Member States to provide emergency assistance to Iraq to deal with the aftermath of this attack,
- 6 Reaffirms its confidence in the effectiveness of the Agency's safeguards system as a reliable means of verifying peaceful use of a nuclear facility, and
- 7 Requests the Director General to transmit this Resolution to the United Nations Security Council

## Text of resolution adopted by the Security Council of the United Nations

The Security Council,

Having considered the agenda contained in document S/Agenda/2280,

Having noted the contents of the telegram dated 8 June 1981 from the Foreign Minister of Iraq (S/14509),

Having heard the statements made to the Council on the subject at its 2280th through 2288th meetings,

Taking note of the statement made by the Director General of the International Atomic Energy Agency (IAEA) to the Agency's Board of Governors on the subject on 9 June 1981, and his statement to the Council at its 2288th meeting on 19 June 1981,

Further taking note of the resolution adopted by the Board of Governors of the IAEA on 12 June 1981 on the 'military attack on the Iraqi nuclear research centre and its implications for the Agency',

Fully aware of the fact that Iraq has been a Party to the Treaty on the Non-Proliferation of Nuclear Weapons since it came into force in 1970, that in accordance with that Treaty Iraq has accepted IAEA safeguards on all its nuclear activities, and that the Agency has testified that these safeguards have been satisfactorily applied to date,

Noting furthermore that Israel has not adhered to the Non-Proliferation Treaty,

Deeply concerned about the danger to international peace and security created by the premeditated Israeli air attack on Iraqi nuclear installations on 7 June 1981, which could at any time explode the situation in the area with grave consequences for the vital interests of all States,

Considering that, under the terms of Article 2, paragraph 4 of the Charter of the United Nations 'All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations',

1. Strongly condemns the military attack by Israel in clear violation of the Charter of the United Nations and the norms of international conduct,
2. Calls upon Israel to refrain in the future from any such acts or threats thereof,
3. Further considers that the said attack constitutes a serious threat to the entire IAEA safeguards regime which is the foundation of the NPT,
4. Fully recognizes the inalienable sovereign right of Iraq, and all other States, especially the developing countries, to establish programmes of technological and nuclear development to develop their economy and industry for peaceful purposes in accordance with their present and future needs and consistent with the internationally accepted objectives of preventing nuclear weapons proliferation;
5. Calls upon Israel urgently to place its nuclear facilities under IAEA safeguards,
6. Considers that Iraq is entitled to appropriate redress for the destruction it has suffered, responsibility for which has been acknowledged by Israel;
7. Requests the Secretary-General to keep the Security Council regularly informed of the implementation of this resolution