COMMISSION OF THE EUROPEAN COMMUNITIES

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COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

on a Memorandum
on the activities of the European Atomic Energy Community relevant to the objectives of Articles III and IV of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) drafted for the 1995 NPT Review and Extension Conference

1. In July 1994, adopting a Joint Action on the preparation of the 1995 Conference to review and extend the Treaty on the Non-Proliferation of Nuclear Weapons (17 April -12 May 1995), the Council noted in its minutes that in support of Article 2, the Commission would supply a contribution on the European Atomic Energy Community's experience and its contribution to the peaceful use of nuclear energy.

2. The attached memorandum fulfills that commitment. The Commission is sending the text to the Council and Parliament for information, as well as to the NPT Review and Extension Conference.

Memorandum

on the activities of the European Atomic Energy Community relevant to the objectives of Articles III and IV of the Treaty on the Non-Proliferation of nuclear weapons

Document prepared by
the Commission of the European Communities
for the 1995 NPT Review and Extension Conference

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I. EXECUTIVE SUMMARY

1. This **Memorandum** prepared by the Commission of the European Communities on behalf of the European Atomic Energy Community **describes**, for the 1995 NPT Review and Extension Conference, the **basic features** of the Treaty establishing the **European Atomic Energy Community** (EAEC or Euratom) signed in 1957, its **relevance for nuclear non-proliferation** and **its activities relevant to the objectives of Articles III and IV of the NPT**. It is also a contribution to the Joint Action adopted in July 1994 by the Council of Ministers (based on Article J.3 of Title V of the Treaty of the European Union concerning a Common Foreign and Security Policy) in which the European Union takes a position **in favour of an unconditional extension for an unlimited duration of the NPT** in 1995.

2. **Euratom came into being in 1958. At the outset of the joint European endeavour, mutual security concerns were still very lively and the nuclear issue figured high among them.** The principal aim of the Euratom Treaty was to seek to create conditions in which a peaceful/civil use of nuclear energy, together with a concomitant vigorous and competitive industry, would emerge. As a necessary part of this development, the Treaty foresaw the need for control of the use to which nuclear material could be put. The experience of Euratom, comprising now two nuclear weapons States and thirteen non-nuclear weapon States, confirms that stable legal commitments and transparency of peaceful nuclear activities is a pivotal condition for developing deep seated confidence among neighbouring states. Peaceful nuclear cooperation, an important pillar of modern industry, is based on such **transparency and on predictability of behaviour in the nuclear field.**

3. **Euratom realizes these goals in two connected ways**. Its many peaceful nuclear cooperation activities, ranging from the nominal ownership of fissile material by the Community to industrial joint ventures or relations with third countries, work to the common benefit of the Member States while at the same time providing transparency on the nuclear activities amongst neighbouring states. Its safeguards system, working closely with the International Atomic Energy Agency, covers the civilian nuclear fuel cycles of all Member States. The association and cooperation between Member States, their regional organization (Euratom) and the global organization, the IAEA, has proven flexible and adaptable to changing circumstances.

4. The Euratom Treaty is of unlimited duration. Having accepted peaceful cooperation and transparency as regional commitments, European Union Member States have also extended their commitments to the international non-proliferation regime alike. Their experience of forty years of regional cooperation and twenty-five years of global non-proliferation efforts reinforces **their unanimous endorsement of the indefinite and unconditional extension of the NPT in 1995**. As the sole global international legal instrument in the field of nuclear non-proliferation, it adresses the security concern of all members of the international community in the prevention of the risk of the spreading of nuclear weapons and provides for long-term industrial and technological commitments in the peaceful use of nuclear energy.

II. EURATOM: NON-PROLIFERATION OBJECTIVES AND ACHIEVEMENTS

A. Purposes of the Euratom Treaty

1. The Euratom Treaty was signed in 1957 by the original six Member States of the European Communities. European integration, from the beginning, was aimed at preventing the recurrence of violent conflict in Europe and at fostering the economic well-being of all Member States. This dual purpose is reflected in the Euratom Treaty and gives it a specific implicit importance for nuclear non-proliferation.

2. Whereas the Euratom Treaty contains no specific mention of non-proliferation, it can nevertheless be asserted that, today, it is an instrument which furthers the cause of non-proliferation. Moreover the Treaty foresees cooperation with third States and international organisations concerned with the peaceful development of atomic energy.

   Certain chapters of the Treaty contain provisions that are of particular significance for the promotion of non-proliferation. These are: Chapters VI (supply), Chapter VII (safeguards) and Chapter IX (the nuclear common market). Other Chapters such as Chapter I, V, X as well as article 199 on research, joint undertakings and the right of the Community to conclude international agreements, are also relevant to the extent that they are supportive of the activities governed by Chapter VII, safeguards, which is the part of the Euratom Treaty with the most direct bearing on the objective of non-proliferation.

B. Division of authority under the Treaty

1. The European Council is responsible for defining the general political guidelines. The Council of Ministers is the primary legislative authority under the Euratom Treaty. The Commission of the European Communities (hereafter named "the Commission") has the right of initiative for legislation and is responsible for ensuring its proper implementation. The Court of Justice of the European Communities ensures that in the interpretation and application of the Treaty the law is observed. The European Parliament is involved primarily in the approval of the budget of the Euratom Community. It also receives reports and is entitled to request information from the Commission and the Council.

2. The Euratom Treaty does not cover matters relating to Foreign and Security Policy. Non-proliferation matters falling outside the scope of application of the Euratom Treaty have been dealt with in the framework of European Political Cooperation (EPC) which provided for cooperation between the Member States in the field of foreign policy. With the entry into force of the Treaty on the European Union in 1993, these questions are now dealt with as part of the Common Foreign and Security Policy which has now replaced EPC.

C. The Supply Agency and stipulations on supply and exports of nuclear materials

1. One important field of activity of the Community in the civil use of nuclear power is the responsibility of the Commission and the Euratom Supply Agency (ESA) for supply of nuclear fuels. Article 2(d) of the Euratom Treaty lays down as one of the aims of the Community the task of ensuring a regular and equitable supply of nuclear materials to users.

   These tasks are implemented through a common nuclear materials supply policy based on the principle of equal access to sources of supply in which framework the ESA has a right of option on ores, source materials and special fissile materials produced in the Community and exercises its exclusive right to conclude contracts, as laid down in Article 52 of the Euratom Treaty. The Agency has the right to conclude contracts relating to the supply of ores, source materials and special fissile materials coming from inside the Community or from outside. The policy of the Commission and the ESA is to avoid excessive dependency on any single source of supply (diversification) and to ensure that in a context of fair trade the viability of the Community's nuclear industry is maintained. The Commission can issue directives to the ESA and has a right of veto over its decisions.

2. In order to be legally valid, contracts relating to the supply of nuclear material (ores, source materials, and special fissile materials) have to be concluded by the ESA. In practice this means that all

contracts transferring the title to source material or the right to consume special fissile material, including contracts for loans and exchanges of material, may be negotiated between supplier and user, but must be submitted to the ESA for conclusion. For contracts involving only the transformation of material (e.g. conversion, fabrication), the ESA is notified in accordance with Article 75 of the Euratom Treaty.

The ESA checks that contracts are compatible with the provisions and objectives of the Euratom Treaty and the Community's supply policy, and that they conform with the international obligations of the European Communities, for instance as far as the safeguards clauses of the contracts are concerned. The Commission's Euratom Safeguards Directorate is informed of the contractual intervention of the ESA (conclusion of a contract or acknowledgement of a notification), and can thus verify that material movements, which are reported by advance notifications of imports and exports, are covered by a relevant contract.

From a safeguards and non-proliferation point of view these activities of the ESA form a useful addition to the effective early warning system as contracts are normally concluded well ahead of physical movements of nuclear materials.

3. In accordance with Article 59 of the Euratom Treaty, exports of nuclear material produced in the Community must be authorised by a decision of the Commission. No authorisation can be given if the recipients of such supplies fail to satisfy the Commission "that the general interests of the Community will be safeguarded or if the terms and conditions of such contracts are contrary to the objectives" of the Euratom Treaty.

D. Euratom Safeguards

1. In accordance with Chapter VII of the Euratom Treaty, the European Commission "shall satisfy itself that in the territories of Member States: a) ores, source materials and special fissile materials are not diverted from their intended (i.e. peaceful) use as declared by the users; and b) the provisions relating to supply and any particular safeguarding obligations assumed by the Community under an agreement concluded with a third State or an international organisation are complied with". Therefore the Commission has developed an independent safeguards system with a very broad scope.

   All civil nuclear material on the territory of the Member States must be placed under Euratom safeguards.
   In 1994, the stocks under Euratom safeguards comprised:

   * 242 500 t of uranium (natural, low enriched, depleted) and thorium and heavy water
   * 12 t of high enriched uranium
   * 330 t of plutonium

   The nuclear materials shown above were used, processed, handled or stored in:

   * 380 major nuclear installations including nuclear power reactors, enrichment plants, fabrication plants, reprocessing plants, conversion plants and stores;

   * more than 400 installations where smaller quantities of nuclear materials are customarily used including carriers, intermediaries, waste conditioning and others.

2. Except for the installations operated by the Commission, responsibility for physical protection of nuclear materials lies with individual Member States. In the domain of safeguards however, the Member States are obliged to submit their civil nuclear materials to the Euratom safeguards. Information on nuclear activities is provided to Euratom directly by the operators of nuclear installations.

   As indicated above, the main objective of Euratom safeguards is to make certain that ores, source materials and special fissile materials are not diverted from their intended use. Their scope is therefore different from the IAEA safeguards.

In the two NW Member States, Euratom safeguards do not apply to materials or installations or parts of installations that have been assigned to meet defence requirements. Within the civil fuel cycle, however, the implementation of Euratom safeguards is the same, irrespective of the Member States being a NWS or a NNWS.

3. To safeguard the materials and installations according to the mandate of Chapter VII of the Treaty, the Commission has, since 1958, deployed a corps of Euratom safeguards inspectors. They have unlimited access rights to the extent necessary to apply safeguards. Euratom is authorized to receive accountancy information directly from the nuclear industry, without member governments' supervision, and to instruct those companies as far as safeguards matters are concerned.

The following inspection effort was spent for the inspection at the nuclear installations (inspection person-days):

1989	1990	1991	1992	1993	1994 (provisional)
7417	7564	7757	7916	8418	8778

E. Sanction power against violations and the role of the Court of Justice of the European Communities

1. Operators are obliged to inform the Commission on the technical data of plants and to keep inventory balances. If the safeguards are not supported or even impeded, the Commission may receive from the European Court of Justice authority to enforce compliance. For this control and enforcement the Commission is entitled to request and receive support from national authorities. In other cases where the obligations in relation to safeguards are found not to be implemented in a satisfactory manner, the Commission may step in and issue either a warning, cancel certain privileges (like financial and technical support), replace certain persons at the facility with persons appointed by the Commission and the national authorities, or withdraw fissile materials.
Should a member State prove uncooperative, the Commission is authorized to bring the particular government before the European Court of Justice.

2. The Court of Justice also has far-reaching authority as a means to ensure full compliance. The Court may interpret the provisions of the Treaty and ascertain that regulations are in accordance with the Treaty. The Commission may take a Member State to the Court if its obligations under the Treaty have not been respected. Member States may take the Commission to the Court if it is thought to have neglected its obligations or overstepped its authority. Finally, individual persons may complain over decisions that violate their rights.

F. Cooperation in the civil uses of nuclear technology research

1. The Treaty encourages cooperation in research among Member States and with third countries. The Commission is responsible for promoting and facilitating nuclear research in the Member States and for complementing out a Community research and training programme. Nuclear research activities are registered and coordinated so that efforts are not duplicated. Further, the Commission produces a list of such areas where research is needed in order to enhance the technological capabilities of the Union as a whole. It may give financial and technical assistance to the research projects from its regular budget.

2. The Joint Research Centre (JRC) is a body established by the Treaty that is charged with conducting and promoting scientific research efforts including research in nuclear sciences. During the newly adopted R&D Framework Programme (1994-1998), half of the JRC nuclear budget (254 MECU) will be devoted to safeguards, including a direct support to the IAEA.

The research conducted at the JRC is aimed at obtaining, in good time, results or new techniques implementation of which is necessary for compliance with obligations arising from the safeguards provided in the Euratom Treaty and the NPT. It is necessary in particular to develop new techniques

to meet the new challenges related to the development of the fuel cycle and the strengthening of the control systems.

3. In 1994 the Community adopted the Fourth Framework Programme on research and technological development and the Euratom programme for 1994-98. ECU 2.3 billion will be allocated to research and technological development in the field of energy (non-nuclear energy, nuclear safety and fusion). In the field of nuclear energy, the Fourth Programme's objectives for Euratom are:
   - enhanced expertise in specific areas (reactor safety, management of long-lived radionuclides, risk of fissile material releases ...)
   - progress towards the long-term objective of the Community thermonuclear fusion programme, namely joint development of safe and environment-friendly prototype reactors, leading to the construction of economically viable electric power stations that will satisfy potential users' requirements. The primary objective for 1994-98 is to draft plans for the first experimental fusion reactor, the International Thermonuclear Experimental Reactor (ITER)..

G. Nuclear Safety and Radiation Protection

1. Although not directly linked to non-proliferation objectives, nuclear safety is an important factor for the increasing credibility of the peaceful use of nuclear energy in the European Union and on a wider basis especially in the aftermath of the Chernobyl accident. More recently, the financial and technical assistance provided towards improvement of safety measures in the nuclear reactors of the countries of the former Soviet Union and Central and Eastern Europe has confirmed the pressure on the European Union to provide play a key role in that field.

   All activities in the field of nuclear safety at the Community level are based on the Euratom Treaty and as regards the technological aspects of nuclear safety and the management of radioactive waste, on Council resolutions adopted in 1975, 1980, and 1992.

2. In application of Article 31 of the Treaty radiation protection legislation has been adopted. In addition to the basic safety standard Directive, eight pieces of legislation have been adopted in the field of shipment of radioactive material and waste, foodstuff contamination, public information, health protection of the patient, health protection of outside workers and rapid information exchange in case of a radiological emergency.

   In accordance with Article 35, the Commission verifies the operation and efficiency of environmental monitoring facilities installed in Member States. An average of 3-4 inspections are made annually.

3. On a Commission proposal, the Council adopted on 19 December 1994 a resolution on a strategy in the field of radioactive waste management. In particular, the resolution takes the view that each Member State is responsible for the proper management of the radioactive waste produced on its territory whilst leaving open the possibility of cooperation between Member States.

4. In the field of safety of nuclear installations, a Council Resolution of 1992 called the Member States and the Commission for progressing towards an equivalent and satisfactory degree of protection of the health and of the environment in the Community at the highest practical safety levels and for contributing to the international acceptance of similar high safety levels. This Resolution recommends that cooperation between the Community's safety authorities be increased and that the know-how and experience be transferred to the countries of Central and Eastern Europe and the former Soviet Union. The main concern of all Member States is the safety of nuclear installations and the further improvement of safety according to the state of the art. It appears that different national approaches towards the same safety objectives are an advantage for the development of safety under the premise that national practices are compared and divergencies are identified in order to seek improvements.

III. THE NPT AND EURATOM: IMPLEMENTING COMMON OBJECTIVES

A. Mutual support between regional and global nuclear cooperation

1. While Euratom was not founded as a non-proliferation organization, it is today a regional organization with the objective of promoting peaceful nuclear cooperation among Member States and of facilitating Member States' fulfillment of their non-proliferation goals and obligations. The close interconnection between a regional organization and the global regime is recognized in the text of the NPT: Article III, 4 recognizes the right of States to associate themselves for the conclusion and, subsequently, the implementation of safeguards agreements with the IAEA, as the non-nuclear weapon States members of the European Union did in the safeguards agreement INFCIRC/193.

2. Euratom is the regional organization with the longest experience whose activities are closely connected with the letter and the spirit of the NPT, in particular in the working out of the interrelation between a regional and a global safeguards system and the connection between regional and global cooperation in the peaceful uses of nuclear energy.

B. Cooperation with and the support of the International Atomic Energy Agency; compatibility and mutual utility of regional and global safeguards

1. The relationship between Euratom and the IAEA is based on the following legal instruments:

   - the framework cooperation agreement of 1975 between Euratom and the IAEA
   - the safeguards agreement between the IAEA, Euratom and the Non-Nuclear Weapon Member States; this agreement, INFCIRC/193 is modeled after the NPT-model safeguards agreement INFCIRC/153
   - the safeguards agreement between Euratom, the UK and the IAEA: INFCIRC/263
   - the safeguards agreement between Euratom, France and the IAEA: INFCIRC/290

   INFCIRC/193 is the agreement between the IAEA and Euratom that enables the IAEA to implement safeguards in the Euratom NNWSs and regulates the relationship between both safeguards authorities. It was signed in 1973 and entered into force in 1977. It provides that the Agency shall take due account of the effectiveness of the Community's system of safeguards; its protocol specifies the conditions and means of the cooperation between Euratom and the IAEA.

2. In order to enhance the cooperation between Euratom and the IAEA and to find more effective and cost-saving ways of meeting their respective responsibilities, a New Partnership Approach (NPA) was decided in April 1992 between the IAEA and the Commission. The NPA would:

   - allow the re-interpretation of certain provisions of INFCIRC/193; this relates notably to the principle of observation, the right for each organisation to decide on the activities it needs to perform in order to achieve its safeguards objectives and to the disjunction of Euratom and IAEA tasks.

   - enable the IAEA to reduce, once the NPA implemented, its inspection effort in the NNWSs of the EU.

   Implementation of the NPA started in 1992 for light water reactors and fabrication plants (LEU). It is expected that the NPA could be fully implemented from the end of 1995.

3. The structure of the safeguards cooperation with the IAEA may be summarised as follows:

   - Participation of the IAEA in Euratom inspections. This is a daily operational task. At about 50 % of all Euratom inspections IAEA inspectors participate;
   - reporting of the nuclear material movements and inventories pursuant to the provisions of the Verification Agreements and support to the IAEA system of world wide accounting for the transit of nuclear materials;
   - meetings at least twice per year of the Liaison Committees;

- negotiations of documents of a technical/legal nature called the Facility Attachments or installation attachments;
- numerous contacts and working groups, participation in seminars, common training activities;
- collaboration with the IAEA in the development, testing and implementation of instruments, methods, techniques;
- the design and implementation of safeguards systems. In some areas, such as the large plutonium processing plants, Euratom's experience in the design and implementation of safeguards system is unique.

4. On the initiative of the EC and its Member States, the Board of Governors of the IAEA, during its February 1993 meeting, authorized the Secretariat to implement its proposals for a system of universal reporting on the export, import and production of nuclear material, specified equipment and non-nuclear materials commonly used in the Agency's safeguards system. Under this scheme, exporting and importing states are invited to report, on a voluntary basis, all transfers of such items. Such information was available to the IAEA so far only to transfers from the NPT parties to non-nuclear weapon states non-parties. The new comprehensive flow intended to enhance the level of knowledge of the IAEA and help it to determine when it has to ask for the application of safeguards in recipient non-nuclear weapon states party to the NPT. The Member States of the EU participate in the system of universal reporting and their reports on nuclear material are made through Euratom (while reports on equipment are made directly by the Member States).

5. A formal cooperative support programme between the IAEA and the Commission on behalf of Euratom has been defined in an exchange of letters, signed on May 7th, 1981. The basic objective of this cooperation/support is to exchange with the IAEA the Commission's technical experience developed over many years, principally in the area of R&D and its practical implementation by inspectors in European nuclear facilities. In general, this exchange of experience results in:

- providing technical assistance in fields, such as analytical techniques applied to reprocessing plant safeguards, environmental sampling and analysis, sealing techniques of spent fuel casks, advanced surveillance techniques, nuclear material accountancy and universal reporting;
- the harmonisation of procedures and techniques of potential use in safeguards implementation, in particular for non-destructive assay, procurement of reference materials and application of containment and surveillance techniques;
- training of inspectors, in the field of non-destructive assay, volume measurement techniques and physical inventory verification exercises.

Furthermore, the JRC was requested by the Council of Ministers to implement a study of new techniques to strengthen the international controls carried out by the Agency including the development of ultrasensitive analysis of samples taken from the environment.

C. Peaceful nuclear cooperation with non-member countries

1. External Relations Agreements

Among the responsibilities entrusted to it by the Euratom Treaty, the EAEC has the task of establishing with other countries and international organizations such relations as will foster progress in the peaceful uses of nuclear energy. To this end, Euratom can conclude agreements and contracts with a third state, an international organization or a national of a third state within the limits of its powers and jurisdiction. Non-proliferation issues, safeguards, research, radioprotection, safety and supply of nuclear equipment and material are the main subjects of these agreements which set up the framework for nuclear cooperation with third states.

a. The current Euratom/USA nuclear cooperation agreement entered into force in 1960 and provided a good basis for intensive nuclear cooperation. As the agreement expires on 31 December 1995, both the EU and the USA wish to renew the transatlantic partnership. It is envisaged that a new agreement which is currently being negotiated will cover political and non-proliferation conditions, nuclear trade, industrial and commercial cooperation, nuclear research and development and nuclear safety and related aspects.

b. Euratom concluded nuclear cooperation agreements with Australia in 1981 and Canada in 1959 (subject to subsequent amendments). Consultations are held regularly with a view to enhancing cooperation.

c. Euratom is a party to the cooperation agreement concluded between the Communities and the USSR in 1989. Until the conclusion of a comprehensive specific arrangement, trade in nuclear material between the EU and Russia is currently being carried out in accordance with the provisions of the 1989 cooperation agreement. Once the Partnership and Cooperation Agreement (signed in Corfu in June 1994) has been ratified and comes into force, its provisions, which to some extent refer to the 1989 cooperation agreement, will apply to trade in nuclear materials with Russia. Euratom has also negotiated with the Russian Federation cooperation agreements in the fields of nuclear safety and thermonuclear fusion.

d. The interest shown in cooperating with other States of the former Soviet Union is reflected in the proposals made by the Commission to the Council for negotiations of nuclear trade agreements with Kazakhstan, Kyrgystan, Tajikistan, Ukraine and Uzbekistan. Furthermore, cooperation in the field of nuclear safety with Ukraine and Kazakhstan as well as in the field of thermonuclear fusion is also envisaged.

e. Further important international cooperation takes place in the following areas:
- thermonuclear fusion: ITER agreements Euratom/Usa/Russia/Japan;
- safeguards research agreement with the US Department of Energy.

2. PHARE and TACIS: two major European Community Technical Assistance efforts of the 1990s

The European Commission has initiated EC programmes, namely, PHARE (for Central European and Eastern Countries) and TACIS (for the CIS) that provide important means to stop further deterioration and improve nuclear safety of the Eastern nuclear installations and to contribute to bringing their safety standards to a level equivalent to Western standards. Within TACIS nuclear safety is a particularly important element. A programme has been initiated in cooperation with local authorities for nuclear installations. In the past three years, TACIS has spent more than ECU 300 million in this effort.

A progress report on TACIS, PHARE and nuclear safety is attached as Annex II to this document.

The International Centre for Science and Technology in Moscow was created to provide peaceful employment opportunities to scientists and engineers in the Newly Independent States that were previously involved in work on weapons of mass destruction. The Centre, which began operating in March 1994, was founded by the European Community (TACIS), Japan, the Russian Federation and the USA. The EC contributes around $25 million to support the Centre. As of September 1994, 76 project proposals had been approved, representing a total funding commitment of $40.8 million. These projects (one third dealing with nuclear matters) are scientific projects of common interest and will sponsor more than 4000 scientists for a period of about three years.

3. Collaboration with CIS countries in the safeguards field

a. In 1992, Member States of the EU, the European Parliament and the European Commission agreed that further and immediate efforts were required to collaborate with the CIS republics and as, appropriate, with other Eastern European countries in the field of safeguards. For such cooperation and support activities, the general objectives include:
- contributing to the improvement of the accountancy and control system in CIS Republics to the standards of nuclear material accountancy and control maintained in other countries, as, for example in the EU, having substantial nuclear programmes;
- promoting consistency of such systems with the safeguards requirements of the IAEA and;
- thereby contributing to the non-proliferation of nuclear materials and to the minimisation of hazards to the public through illegal trafficking in nuclear materials.

b. The cooperation started in 1992 and the following achievements may already be pointed out:

- concepts for cooperation with CIS have been developed; the cooperation with relevant authorities and operators has been initiated and is now of a very concrete nature;
- several seminars with wide participation from CIS, Community operators and Commission services were held; CIS experts/inspectors participated and will further participate in Euratom inspection exercises;
- the organisational set-up as well as the work programmes for projects were agreed with the CIS authorities concerned;
- the practical work, other than of a programmatic nature, will continue with the objective of contributing to the design, testing and implementation of high-quality nuclear materials accountancy systems.

NUCLEAR ENERGY IN THE EUROPEAN UNION: THE CURRENT POSITION

1. The nuclear industry in the European Union is now mature; it has home-grown technology, covers the whole fuel cycle, and accounted for around a third of the (then twelve) Member States' electricity output in 1994.

   As of 1 January 1994 there were some 131 working nuclear reactors in the EU, with a total capacity of 108GWe, and another five under construction which would bring the total to 7 GWe.

2. The situation varies widely, however. Half of the Member States produce electricity using nuclear power, while the other half do not.

   Five States (Denmark, Greece, Ireland, Luxembourg and Portugal), never developed nuclear power. Italy halted its nuclear programme a few years ago, while maintaining its research policy.

   In 1994, nuclear power's share of electricity production was as follows:

France	75.3 %
Belgium	55.8 %
Spain	35 %
Germany	29.3 %
United Kingdom	25.8 %
Netherlands	4.9 %

   (source: Eurostat)

Finland	31%
Sweden	51%

3. Europe's nuclear industry has a major share of the world market in all stages of the fuel cycle. In particular, it is a world leader in reprocessing, using advanced techniques to recover recyclable products and process nuclear waste.

4. The EU is in the forefront of nuclear research, part-sponsored by the Community, into both current industrial processes (reactor safety, radioactive waste management and radiation protection) and future technology (thermonuclear fusion).

5. The nuclear industry is a major employer, accounting for over 400 000 jobs in the EU in 1994.

6. Political concerns have checked the rise of nuclear energy, in terms of its share of the EU energy market, at around a third of total electricity production. The most recent EU enlargement has not materially altered the situation.

   Trends in nuclear energy use are now dictated by changes in public opinion in the various Member States. The issue facing policy makers is therefore one of quality rather than quantity.

   Europe's relatively fortunate position compared with most areas of the world must not be allowed to close its eyes to the global energy and environmental problems looming ahead. Nuclear energy, developed in conditions of political stability and responsibility, is a potential source of abundant, cheap electricity that will not deplete the earth's hydrocarbon resources. It will, however, mean we have to continue to manage the environmental constraints involved.

   That is the conclusion which the Commission has reached, while acknowledging that for political reasons some Member States have decided to abandon domestic nuclear electricity production for the foreseeable future.

TACIS/PHARE PROGRESS REPORT - NUCLEAR SAFETY

I. GENERAL OVERVIEW

The overall programme objectives are to improve the safety of operating power plants and other civilian nuclear fuel and waste treatment facilities, to strengthen regulatory regimes and to promote regional cooperation on nuclear safety among countries operating Soviet-design nuclear power facilities.

The European Commission is also charged with the responsibility for the G-24 Coordination Mechanism for Nuclear Safety Assistance to Central and Eastern Europe and the former USSR. This involves 22 donors and 17 recipient countries with assistance totalling ECU 728 million and 659 projects.

II. STATUS OF IMPLEMENTATION - TACIS

1991 programme	ECU 53 million
1992 programme	ECU 80 million (of which ECU 20 million for ISTC)
1993 programme	ECU 103 million (of which ECU 15 million for Nuclear Safety Account)
1994 programme	ECU 91 million (including Action Plan)

Design safety studies

The TACIS 1991 programme (ECU 53 million) consists of 35 projects which are mainly generic safety studies (covering specific reactor types) or training projects. The findings of the generic studies can be extrapolated to similar reactor types.

Under the 1992-1994 programmes, design safety projects continue to be tendered or contracted; these are mainly intended to follow up or expand on useful TACIS 1991 projects. Complementary studies deal especially with VVER 213 and 1000, RBMK, and fast breeder reactors; examples include a VVER 1000 core analysis and assistance in the creation of a service maintenance centre.

On-site assistance

The TACIS 1992-1994 programmes concentrate to a large extent on the on-site assistance component, seen to be the most appropriate way to help improve safety as recommended by the G-7.

The following nine sites were chosen for this assistance:

- In Russia: Smolensk, Sosnovy Bor, Kola, Kalinin, Balakovo and Beloyarsk.
- In Ukraine: Rovno, South Ukraine and Zaporozhe (added in the 1993 programme).

Assistance to Safety Authorities

The safety authorities of the European Union are providing this support and are working with the Russian and Ukrainian authorities under two large projects underway since December 1993. A detailed programme has been established to guide the assistance in developing a strong legal and technical basis for the national regulators in areas such as licensing, training, inspections etc... In addition, computer equipment has been procured and installed for the beneficiaries to improve the infrastructure, including office equipment and links between headquarters and regional offices. Computerisation of the infrastructure and telcommunication technology is being extended to the regional centres, inspections centres and the power plants.

G-7/EU Ukraine Action Plan

Following the Corfu European Summit, a contribution of ECU 25 million from TACIS has been made for the implementation of the G-7/EU Ukraine Action Plan, which aims at the rapid closure of Chernobyl and the completion of the three new VVER 1000 reactors under constructions as well as energy reforms. (Over the period 1994-1996 the EU would grant ECU 100 million from TACIS funds.)

III. STATUS OF IMPLEMENTATION - PHARE

The PHARE programme for nuclear safety was launched in the budget years 1990/91, with the same objectives as the TACIS programmes. A grand total of ECU 100 million has been allocated during the period 1990-1994 with this aim; an additional ECU 5 million was contributed to the NSA from the Phare 1993 budget.

Phare 1990: Two national programmes included projects related to the nuclear safety: the Czechoslovakia national programme and the Polish national programme.
Phare 1991: it continued with the Czechoslovakian national programme, including three projects for Bohunice NPP. For Bulgaria, ECU 1.2 million were allocated under the Chapter Energy for a study regarding waste management. As the Kozloduy NPP represented a serious concern for the international community, confirmed by an IAEA review team in 1991, a vast plan of aid was set in place, including on site assistance, support to the regulator and an important series of safety studies known as "6 Month Programme".
Phare 1992: continued assistance to Kozloduy NPP and to the Bulgarian, Slovakian and Lithuanian nuclear safety authorities was financed. Waste management and fuel cycle projects are underway, including a large regional study on these problems.
Phare 1993: continues support to the regulatory authorities, the solution of fuel cycle and waste problems, as well as large-scale improvement of operational and design safety of the VVER 440-213 plants (Dukovany, Paks, Bohunice V2). The Bulgarian 1993 national programme includes on-site assistance and support to the safety authorities. The Lithuanian 1993 national programme includes an extension of the scope of a simulator for Ignalina. ECU 5 million was earmarked for the Nuclear Safety Fund.
Phare 1994: Regional Nuclear Safety Programme budgets ECU 20 million. The national programme for Bulgaria foresees ECU 5 million.

IV. FLANKING MEASURES

On 9 December 1992 the Commission adopted a *Proposal for a Council Decision amending Decision 77/270/Euratom to authorize the Commission to contract Euratom borrowings in order to contribute to the financing required for improving the degree of safety and efficiency of nuclear power stations in certain non-member countries*. The Proposal was endorsed by Parliament on 20 January 1994 and adopted as final by the Council on 21 March 1994.

The Decision authorizes the Commission to contract Euratom borrowings to cover loans to finance projects aimed at improving the safety and efficiency of nuclear power stations in Central and Eastern Europe and the Newly Independent States of the former Soviet Union. To be eligible, projects must:

- pertain to nuclear power stations or fuel cycle installations already in existence or under construction, or to decommissioning installations, where upgrading them cannot be justified on technical or economic grounds;
- have been cleared by the national authorities, and by the relevant safety authorities in particular;
- have been approved by the Commission as to their technical and economic merits.

"CONCERT" (Concertation on European Regulatory Tasks) was established in 1991 by the Commission for the purposes of developing cooperation between Community and Eastern European safety authorities. Areas proposed for joint activities were information exchange on regulatory bases and procedures, regulatory aspects of technical and operational problems as well as regulatory assistance related to the objectives and arrangements for establishing a national nuclear safety regulatory regime. The Commission set up, at the beginning of 1992, the "Regulatory Assistance Management Group" (RAMG) in support of the CONCERT structure and consisting of the safety authorities willing to lend their support to their counterparts in Eastern Europe as part of technical assistance programmes financed by the Community (PHARE and TACIS).

V. PROSPECTS

For the safety of Nuclear Installations, priority will be given to actions in support of technical assistance and regulatory assistance. Ongoing work on technical harmonisation will be maintained with the emphasis on technology transfer to neighbouring countries.
In so far as G-24 Coordination is concerned, it is expected that the G-7 multiannual programme of action will be extended to include storage of spent fuel at reactor sites. Cooperation with the IAEA, NEA/OECD and EBRD will be intensified.

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