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EUROPEAN ATOMIC ENERGY COMMUNITY

REPORT

On the implementation of the obligations under the

Convention on Nuclear Safety

4th Review meeting of the Contracting Parties

(presented by the Commission)

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Executive Summary

The European Atomic Energy Community (Euratom) is a regional organisation as referred to in Article 30 (4) of the Convention on Nuclear Safety (hereinafter: the Convention). It acceded to the Convention on 31 January 2000. Regional organisations must in matters within their competence fulfil the responsibilities, which the Convention attributes to the Member States (Article 30(4)(ii) of the Convention).

Euratom submits the present report for peer review at the fourth Review Meeting of the Convention at the International Atomic Energy Agency in April 2008. This report demonstrates how the European Atomic Energy Community (Euratom) contributes to meeting the main objective of the Convention: to achieve and maintain a high level of nuclear safety worldwide by enhancing Community measures and international cooperation. It also shows how the Community meets the obligations of the applicable articles established by the Convention.

The scope of this report is limited to the Article 7 and Articles 14 to 19 of the Convention as stated in the Declaration under Article 31(2) of the Convention, deposited with the Director General of the IAEA on 11th May 2004. As such, the Convention applies to nuclear power reactors. Euratom does not possess any nuclear power plants (hereinafter NPPs) and the only research reactor owned by Euratom, which is still in operation, is the HFR research reactor in Petten (NL). It is operated by a Dutch entity and regulated by the Dutch regulatory authority. For these reasons the present Euratom report entails no information on research reactors.

The present report is structured according to the Guidelines regarding national reports under the Convention on Nuclear Safety established by the Contracting Parties to the Convention (INFCIRC/572/Rev.2). It is a comprehensive compilation, which has been updated on the basis of all past reports. The report contains changes and new developments since the last report of 2005 as well as new additional information of a pure explanatory nature answering questions received during the last review meeting in April 2005.

Section 1 – Introduction – explains the status, organisation and competences of the European Atomic Energy Community and gives an overview of the relationship of Euratom with its Member States and refers to the Declaration of Competences deposited by Euratom according to Article 30 (4) iii of the Convention (see Annex 1).

Section 2 – Implementation of the Convention – contains the article by article review.

Section 3 – Activities aiming at improving safety – refers to a wide range of past, ongoing and future activities carried out by Euratom in the field of the Convention.

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SECTION I
INTRODUCTION

1. THE EUROPEAN ATOMIC ENERGY COMMUNITY - EURATOM

The European Atomic Energy Community (hereinafter referred to as Euratom) is an international organization endowed with international legal personality. While membership and organization of Euratom is fully integrated with the European Union, Euratom is a separate legal entity bearing rights and duties on the international plane.

The following States are Members of the EU and thus Members of Euratom: The Republic of Austria, the Kingdom of Belgium, the Republic of Bulgaria, the Republic of Cyprus, the Czech Republic, the Kingdom of Denmark, the Republic of Estonia, the Republic of Finland, the French Republic, the Federal Republic of Germany, the Hellenic Republic, the Republic of Hungary, Ireland, the Italian Republic, the Republic of Latvia, the Republic of Lithuania, the Grand Duchy of Luxembourg, the Republic of Malta, the Kingdom of the Netherlands, the Republic of Poland, the Portuguese Republic, Romania, the Slovak Republic, the Republic of Slovenia, the Kingdom of Spain, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland. All the EU Member States have ratified the Convention on Nuclear Safety. With Malta having finalised the adhesion process all of them soon will be Contracting Parties.

The European Union (EU) is based on the European Community (hereinafter: EC)[1], along with the European Coal and Steel Community (hereinafter: ECSC) and the European Atomic Energy Community (Euratom). While the European Coal and Steel Community (ECSC) ceased to exist when the Treaty of Paris establishing it expired in 2002, the EC and Euratom together remained to form the so called European Communities and as such the first "pillar" of the European Union. Both the European Community Treaty and the Treaty establishing the European Atomic Energy Community (known as the Euratom Treaty) were signed in Rome on 25th March 1957 for an indefinite duration.

The EU is not a federal state, nor is it an intergovernmental organization. The European Union is, in fact, unique because it constitutes a new legal order in international law. For the mutual social and economic benefit its Member States have set up common institutions to which they delegate some of their sovereignty so that decisions on specific matters of joint interest can be taken at European level. The law of the European Communities (known as "EU Law") operates alongside the laws of the Member States. EU law has primacy over the national law and may also be directly applicable within the legal systems of its Member States.

[1] The European Community (EC) was originally founded on March 25, 1957 by the signing of the Treaty of Rome under the name of European Economic Community. The 'Economic' was removed from its name by the Maastricht treaty in 1992, which at the same time effectively made the European Community the first of three pillars of the European Union, called the Community (or Communities) Pillar.

2. EURATOM ACCESSION TO THE CONVENTION ON NUCLEAR SAFETY

Euratom acceded to the Convention on Nuclear Safety (hereinafter: CNS) by a Decision of the Commission of 16 November 1999[2] on the basis of Article 101 of the Euratom Treaty following a Decision of the Council of 7 December 1998. The instruments of accession were deposited with the Director General of the International Atomic Energy Agency on 31 January 2000. Thus, for Euratom the Convention entered into force on 30 April 2000 in accordance with Article 31(2) of the Convention.

Euratom participated in the 2nd Review Meeting of the Contracting Parties (Vienna, 15-26 April 2002). This participation was restricted to those fields for which a Community competence had been declared and this fact was duly reflected in the Euratom Report presented by the European Commission at that forum.[3]

In December 2002, the Court of Justice of the European Communities annulled the third paragraph of the Declaration attached to the Council Decision of 7 December 1998 approving the accession of the European Atomic Energy Community to the Nuclear Safety Convention in so far, as it failed to state that the Community was competent in the fields covered by Articles 7, 14, 16(1) and (3) and 17 to 19 of the Convention.[4] On the basis of this Court ruling a second Declaration under Article 31(2) of the Convention was deposited with the Director General of the IAEA on 11th May 2004[5].

Euratom participated in the 3rd Review Meeting of the Contracting Parties (Vienna, 11-22 April 2005) and submitted a report according to Article 5 of the Convention, taking into account the revised Declaration of Competences under Article 31(2) of the Convention. Answers to the five questions on the report submitted by non Member States were given within the deadline.

Euratom submits the present report for peer review at the fourth review meeting of contracting parties to the Convention at the International Atomic Energy Agency in April 2008. The report is presented by the Commission on behalf of Euratom.

3. SCOPE OF APPLICATION AND COMMUNITY COMPETENCES FOR THE PURPOSES OF THE CONVENTION ON NUCLEAR SAFETY (CNS)

3.1. Community Competences in relation to the Convention

On the basis of Article 2(b) and the relevant Articles of Title II, Chapter 3, entitled "Health and Safety" of the Euratom Treaty in connection with the Decision of the Court of Justice of

2 Commission Decision 1999/819/Euratom of 16 November 1999 concerning the accession to the 1994 Convention on Nuclear Safety by the European Atomic Energy Community (EURATOM), OJ L 318, 11.12.1999, p. 2

3 Report on the implementation of the obligations of the Convention on Nuclear Safety (COM(2001) 568 final.

4 Judgement of the European Court of Justice in Case C-29/99, European Court Reports (hereinafter: ECJ) 2002 Page I-11221, 102-103.

5 See Declaration of Competences in Annex 1

the European Communities of 10th December 2002[6] the Community (Euratom) possesses competences, shared with the abovementioned Member States, in the fields of

- Legislative and regulatory framework, covered by Article 7,
- Assessment and verification of safety, covered by Article 14,
- Radiation protection, covered by Article 15,
- Emergency preparedness, covered by Article 16 paragraph 1, 2 and 3,
- Siting of nuclear installations covered by Article 17,
- Design and construction of nuclear installations, covered by Article 18 and
- Operation of nuclear installations, covered by Article 19 of the Convention.

3.2 Scope of application

According to the Convention, regional organisations must – in matters within their competence – fulfil the responsibilities, which the Convention attributes to the Member States (Article 30(4)ii of the Convention). The participation of Euratom in the CNS Review Meetings is therefore limited to those fields, for which a Community competence was declared by the Declaration under Article 31(2) of the Convention. For this reason only the Articles 1 to 5, Article 7 and Articles 14 to 35 of the Convention apply to Euratom. This fact was and is duly reflected in the past and present Euratom Reports presented by the Commission.[7]

For the purpose of the Convention, 'nuclear installation' means for each Contracting Party any land-based civil nuclear power plant under its jurisdiction including such storage, handling and treatment facilities for radioactive material as are on the same site and are directly related to the operation of the nuclear power plant. Such a plant ceases to be a nuclear installation, when all nuclear fuel elements have been removed permanently from the reactor core and stored safely in accordance with approved procedure, and when a decommissioning programme has been agreed to by the regulatory body.

Euratom does not possess nuclear installations as defined in Article 2(1) of the Convention. Such nuclear installations exist only in the territories of the Member States of the European Atomic Energy Community, to which the Euratom Treaty applies.

Despite research reactors are not formally covered by the Convention (see Art. 2), some Contracting Parties agreed to include them during the last CNS peer review conference. The European Atomic Energy Community owns only one research reactor in operation, the High Flux Reactor (hereinafter: HFR) of the European Commissions Joint Research Centre (JRC)[8]

6 C-29/99 ECJ 2002 Page I-11221, 102-103

7 EURATOM Report on the implementation of the obligations of the Convention on Nuclear Safety (COM(2001) 568 final) and EURATOM Report on the implementation of the obligations under the Convention on Nuclear Safety, Brussels, 13.10.2004, C(2004) 374.

8 For more information on the JRC please see below Section III, Chapter 1.3 "The Joint Research Centre (JRC) of the Commission", p.38 and Chapter 3.1.2 "Specific Programme for research and training activities implemented by direct actions and carried out by the Commission's Joint Research Centre (JRC)", p. 46.

in Petten, Netherlands. The HFR research reactor is formally owned by the Joint Research Centers (JRC) on behalf of the Euratom Community, but it is operated by Nuclear Consultancy and Research Group (NRG), a subsidiary of the Energy Research Centre of the Netherlands (ECN). In the past, the JRC was the owner of the license, but the IAEA recommended the transfer of the license to the operator NRG. For this reason the Dutch competent authority (Ministry of Housing, Spatial Planning and the Environment) transferred the operating licence from JRC to the Dutch entity NRG.

Since more than 25 years all research reactors of the Joint Research Centers in Ispra, Italy, have been shutdown and will undergo decommissioning in the coming years. All nuclear fuel has been removed from their cores. For this reason they are excluded from the scope of application (see Art 2 of the Convention) and will be dealt with in the Euratom Report for the next review meeting under the Joint Convention on the Safety of Spent Fuel and the Safety of Radioactive Waste Management.

For all these reasons the present Euratom report does not include any information about the HFR research reactor in Petten (NL). HFR is considered as a Dutch research reactor. This choice was facilitated by the decision of the Government of the Netherlands to include HFR on a voluntary basis in its 3rd national report to the CNS in 2005.

SECTION II

IMPLEMENTATION OF THE CONVENTION

Article by Article Review

Chapter 2(b) of the Convention – Legislation and Regulation

This section introduces the legal system of the European Atomic Energy Community and its relationship to the national laws of the Member States. It gives an overview on the legislative procedure on the basis of the Treaty establishing the European Atomic Energy Community.

To date no specific legislation on nuclear installation safety has been developed at Community level. However, this section summarizes the existing legislative system affecting the safety of nuclear installations in the Member States and includes statements with regard to the adequacy and effectiveness of that system.

4. ARTICLE 7: LEGISLATIVE AND REGULATORY FRAMEWORK

(1) Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.

(2) The legislative and regulatory framework shall provide for:

i. The establishment of applicable national safety requirements and regulations;

ii. A system of licensing with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a licence;

iii. A system of regulatory inspection assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licences;

iv. The enforcement of applicable regulations and the terms of licences.

4.1. EURATOM law and its relationship to national laws of the Member States

There are three types of Euratom law: The primary source of law is the Euratom Treaty. The secondary sources of law are regulations, directives, decisions, recommendations and opinions on the basis of the Treaty issued by the EU Institutions (Commission or the Council). The final source of law is the case law including interpretation of treaties and institutional acts carried out by the European Court of Justice and the Court of First Instance. The whole body of EU law together is called the "*acquis communautaire*".

Under the institutional provisions of the Euratom Treaty, Euratom possesses its own mechanisms to control the compliance of the national laws of all Member States with the relevant Community legislation. This includes the possibility to accordingly obtain a decision by the Court of Justice of the European Communities, based in Luxembourg.

The relationship between the legislation adopted by Euratom and the national legislation of the Member States is as follows according to Article 161 of the Euratom Treaty:

"In order to carry out their task the Council and the Commission shall, in accordance with the provisions of this Treaty, make regulations, issue directives, take decisions, make recommendations or deliver opinions.

*A **regulation** shall have general application. It shall be binding in its entirety and directly applicable in all Member States.*

*A **directive** shall be binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods.*

*A **decision** shall be binding in its entirety upon those to whom it is addressed.*

***Recommendations and opinions** shall have no binding force."*

4.1.1 Role and function of the European Institutions

The organizational structures of Euratom and EC merged in 1967 by virtue of the Merger Treaty signed in 1965. For this reason both Communities have the same institutions available:

4.1.2 Council of the European Union

The Council of the European Union consists of the respective ministers of national governments of each Member State. The Council of the European Union shares with the European Parliament the responsibility for passing laws and taking policy decisions. The Council decides about the Euratom legislation proposed by the Commission after having heard the opinion of the European Parliament. Most decisions are taken by majority vote, although specific issues may require unanimity. Each Member State presides over the Council for a six-month period. The results of meetings of the Council of the European Union are usually referred to as "Council Conclusions" and have rather a political than a legal character. In case of a session of the European Council – commonly known as "EU Summit" – they are referred to as "European Council Presidency Conclusions".

4.1.3. Commission of the European Communities

The Commission is the only body that can propose new Community legislation. Having heard the opinion of consultative bodies provided for by the Euratom Treaty, the Commission presents the new proposals to the European Parliament and the Council.

As the "Guardian of the Treaties" the Commission enforces current EU law and initiates proceedings against Member States for not implementing or enforcing EU law.

In its role as the manager and executor of common policies and of international trade relationships the Commission manages the EU budget, implements the agreed policies of the Communities and negotiates external agreements with other countries on behalf of the EU. The Commission is independent of national governments and represents and upholds the interests of the Communities as a whole.

4.1.4. European Parliament

The European Parliament represents the people of all EU Member States. It is elected every five years. The plenary sessions of the Parliament are held in Strasbourg, others in Brussels. It shares the responsibility to pass European laws with the Council of the European Union, while the proposals for new laws come from the Commission. However, in the framework of the

Euratom Treaty the Parliament plays mostly a consultative role. Though, Parliament and Council share responsibility for approving the EU's annual budget.

4.1.5. European Court of Justice

The Court of Justice of the European Communities, usually called the European Court of Justice (ECJ), is the highest court of the European Union (EU) in matters over which it has competency. Its mandate is to ensure that the law is observed in the interpretation and application of the Treaties of the European Union and of the provisions laid down by the competent EU institutions. The Court has competence, inter alia, to rule on applications for annulment or actions for failure to act brought by a Member State, an institution or natural or legal persons if they are directly and individually concerned, actions against Member States for failure to fulfill obligations, references for a preliminary ruling and appeals against decisions of the Court of First Instance. It adjudicates most commonly on matters of interpretation of European Union law, raised by:

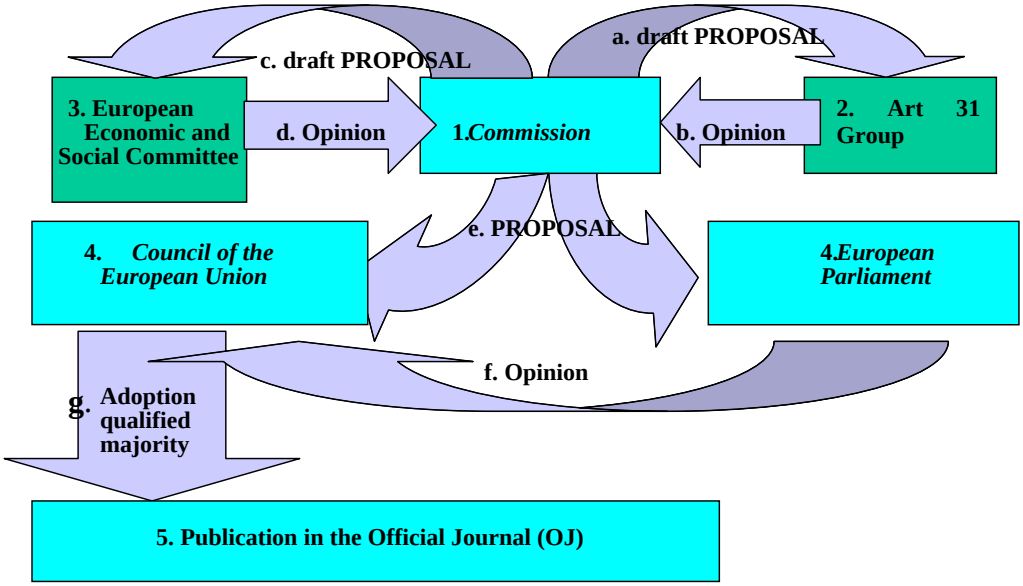
- Claims by the European Commission that a Member State has not implemented a EURATOM Directive or other binding legal requirement.
- Claims by Member States that the European Commission has exceeded its authority.
- References from national courts in the EU Member States asking the ECJ questions about the meaning or validity of a particular piece of EU law. The ECJ gives its ruling on the interpretation of the law, which is binding on the national court.

4.2. Legislative procedure on the basis of the Euratom Treaty

The legislation procedure for acts of secondary law (regulations, directives, decisions, recommendations and opinions) is laid down in the Euratom Treaty itself. For matters related to radiation protection and safety relevant to this convention, the Commission receives guidance from a group of scientific experts established under Article 31 of the Euratom Treaty[9], which then gives rise to a Commission proposal for a Directive or revised Directive. The proposal is submitted first to the Economic and Social Committee. Upon incorporation of all or part of the observations of this Committee, the proposal is published in the Official Journal and forwarded to the Council of the European Union and to the European Parliament. The European Parliament then may propose amendments to the Commission proposal, which are examined by the Commission and taken up as a whole or in part in a revised Commission proposal, which is again submitted to the Council. In the end, under the terms of the Euratom Treaty, the act is adopted by a qualified majority by the Council.

[9] Group of Scientific Experts Referred to in Article 31 of the Euratom Treaty, Rules of Procedures, Art.31/2004 approved final version, 4 June 2004, http://ec.europa.eu/energy/nuclear/radioprotection/doc/art31/procedure_rules_en.pdf

LEGISLATIVE PROCEDURE ART. 31 EURATOM



4.3. Instruments to harmonise national requirements within Euratom

Member States are obliged to transpose or implement the existing binding Euratom legislation within a certain period of time, as detailed in the Act itself. A directive needs to be transposed in national legislation; regulations and decisions are directly applicable in the Member States.

The Euratom Treaty provides for a number of mechanisms to ensure that the relevant legislation is complied with by all Member States.

4.3.1. Compliance checks of national legislation with the provisions of the Euratom Treaty

Under **Article 33 of the Euratom Treaty**, *"each Member State shall lay down the appropriate provisions, whether by legislation, regulation or administrative action, to ensure compliance with the basic standards"* (paragraph 1), which cover, according to the case-law, comprehensive and systematic safety assessments in the sense of Article 14(I) of the Convention. To this extent, *"the Commission shall make appropriate recommendations for harmonizing the provisions applicable in this field in the Member States"*.

Member States must notify to the Commission all national legislation in the areas covered by the Euratom Treaty, both

- before adoption, so that the Commission can formulate, as the case might be, appropriate recommendations in order harmonize the implementing national provisions throughout the Community according to Article 33 of the Euratom Treaty and
- after adoption, so that the conformity of the final measures can be controlled.

4.3.2. Infringement procedures

Whenever the Commission in its role as "Guardian of the Treaties" considers that a Member State is being infringing the Euratom provisions, for example if a Member State did not

transpose a directive into national law within the given deadline, the Commission requests information from the authorities of the Member State concerned and, if explanations are not satisfactory, it can initiate proceedings against Member States. A proceeding can imply lodging an application before the Court of Justice of the European Communities[10].

If the Member State does not take the necessary measures to comply with the ruling of the Court of Justice, the Court can decide to impose a lump sum or penalty on the Member State. In case of urgency, the Commission is entitled to directly hold the Court of Justice (Article 38 of the Euratom Treaty)[11]; though this situation has never occurred.

4.3.3. Implementation in practice

The Commission controls the implementation in practice through verifications of the environmental monitoring facilities on the basis of Article 35 of the Euratom Treaty[12] and through the examination of plans for the disposal of radioactive waste submitted to the Commission for opinion on the basis of Article 37 of the Euratom Treaty[13].

4.3.4. Non-binding Commission recommendations and guidance

In addition, the Commission contributes in achieving a high level of harmonization in Europe by (non-binding) actions including

- Non-binding Commission Recommendations in the areas of the Euratom Treaty[14].
- Other non-binding guidance documents, such as
    - "Radiation Protection Series" Publications of the Commission;
    - Recommendations of Advisory Groups of the Commission [15]

4.3.5. Ad hoc Working Party on Nuclear Safety established by the Council of the European Union

The fact that no EU legislation as such has been developed in the field of nuclear installation safety does not mean that the national systems have nothing in common. Following June 2004 Council conclusion, a wide ranging consultation process was initiated and aimed to identify (a) new instrument(s) that could contribute more effectively to further improving nuclear safety and the safety of the management of the spent fuel and radioactive waste, without excluding any instrument in the framework of the Euratom Treaty and in line with the principles of better law making.[16]

Furthermore, in the most recent Council Conclusions of 8 May 2007, the Council recommended the establishment of a High-Level Group on Nuclear Safety and Waste Management. On July

10 See above chapter 4.1.5. European Court of Justice, p. 13.
11 See Article 38 of the EURATOM Treaty.
12 See below chapter 7.2.5. Verification of environmental radiological surveillance facilities, p. 21.
13 See below chapter 9.1 Description of licensing process…, p. 29.
14 See Annex 2, p. 47.
15 See below chapter 11.2., Experts groups aiming at improving safety, p. 35.
16 See below chapter 12.1. *Ad hoc* Working Party on Nuclear Safety, page 39.

17th, 2007 the Commission adopted a decision establishing a European High-Level Group on Nuclear Safety and Waste Management.

5. SUMMARY OF LAWS, REGULATIONS AND REQUIREMENTS AFFECTING THE SAFETY OF NUCLEAR INSTALLATIONS, THE LICENSING SYSTEM AND THE INSPECTION, ASSESSMENT AND ENFORCEMENT PROCESS

Euratom legislation in force does not address the particular aspects of nuclear installation safety. The primary responsibility for the safety of nuclear installations rests with the holders of the relevant licences under the control of their national regulatory authorities of each Member State. As a result, national regulatory activities, such as the licensing, inspection, assessment and enforcement process in these areas have developed along national lines under the final responsibility of national authorities[17].

5.1. The Euratom Treaty

The Treaty establishing the European Atomic Energy Community (hereinafter: Euratom Treaty) provides the legal framework for the competencies and activities of the European Atomic Energy Community. The signatories of the Euratom Treaty stated in the Preamble to the Treaty that they were in particular:

- Anxious to create the conditions of safety necessary to eliminate hazards to the life and health of the public;
- Desiring to associate other countries with their work and to cooperate with international organisations concerned with the peaceful development of atomic energy.

These statements are in complete accordance with the objectives of the Convention, as set out in Article 1 thereof. In effect, this Article (read with Article 2 of the Convention, "Definitions") focuses on the Convention's objectives, which are threefold, that is:

- a high level of nuclear safety;
- protection from ionising radiation of the population and of the environment in the design, siting, construction and operation of nuclear installations and
- prevention of accidents and mitigation of the radiological consequences of such accidents.

5.2. Uniform Safety Standards to protect the health of workers and the general public

Article 2 of the Euratom Treaty states that in order to perform its task, the Community shall, as provided for in the Treaty, in particular, establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied.

[17] See below chapter 11.1., (Non-binding) Council Resolutions and Conclusions in the field of nuclear safety, p. 33 and chapter 12.2., High-Level-Group on Nuclear Safety and Waste Management, p. 37

Title Two, Chapter 3, Health and Safety, sets out a number of detailed provisions intended to establish, give effect and apply the basic standards mentioned in Article 2(b) of the Euratom Treaty. A substantial corpus of Euratom legislation[18] has been adopted and updated in the course of the years and is completed by a set of legal instruments of different binding nature, covering a wide range of aspects such as

- operational protection of workers (including outside workers) and population,
- natural radioactive sources,
- high activity sealed sources and orphan sources,
- emergency preparedness,
- medical applications,
- control and supervision of shipments of spent fuel and radioactive waste,
- as well as a number of regulations establishing provisions on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power plant, aimed at safeguarding the health of consumers of such products.

The main instrument Council Directive 96/29/Euratom laying down basic safety standards for the health protection of the general public and workers against the dangers of ionising radiation, is the central element of this legislation (hereafter "the Basic Safety Standards Directive")[19].

5.3. Convention of Nuclear Safety

Following the accession by Euratom to the Convention on Nuclear Safety[20], this Convention became a part of the Euratom corpus of binding legislation.

[18] See Annex 2, p. 47.

[19] Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation, Official Journey (hereinafter OJ) L-159 of 29.06.1996, p. 1.

[20] See above, Section I, chapter 2 Euratom accession to the Convention on Nuclear Safety, page 8.

Chapter 2(c) of the Convention – General Safety Considerations

This section of the report summarizes major safety-related features taking into account safety as a whole and, where appropriate, cross-referencing to related items in other articles.

6. ARTICLE 14: ASSESSMENT AND VERIFICATION OF SAFETY

Each Contracting Party shall take the appropriate steps to ensure that:

> **(1) Comprehensive and systematic safety assessments are carried out before the construction and commissioning of a nuclear installation and throughout its life. Such assessments shall be well documented, subsequently updated in the light of operating experience and significant new safety information, and reviewed under the authority of the regulatory body;**
>
> **(2) Verification by analysis, surveillance, testing and inspection is carried out to ensure that the physical state and the operation of the nuclear installation continue to be in accordance with its design, applicable national safety requirements, and operational limits and conditions.**

Council Directive 96/29/Euratom requires that Member States shall require prior authorisation in particular for the operation and decommissioning of any facility of the nuclear fuel cycle and exploitation and closure of uranium mining.

Article 44 of the Directive

Operational protection of the population in normal circumstances from practices subject to prior authorization means all arrangements and surveys for detecting and eliminating the factors which, in the course of any operation involving exposure to ionizing radiation, are liable to create a risk of exposure for the population which cannot be disregarded from the radiation protection point of view. Such protection shall include the following tasks:

> *(a) examination and approval of plans for installations involving an exposure risk, and of the proposed siting of such installations within the territory concerned, from the point of view of radiation protection;*
>
> *(b) acceptance into service of such new installations subject to adequate protection being provided against any exposure or radioactive contamination liable to extend beyond the perimeter, taking into account, if relevant, demographic, meteorological, geological, hydrological and ecological conditions;*
>
> *(c) examination and approval of plans for the discharge of radioactive effluents.*

These tasks shall be carried out in accordance with rules laid down by the competent authorities on the basis of the extent of the exposure risk involved.

6.1. Summary of essential generic results of continued monitoring and periodic safety assessments of nuclear installations using deterministic and probabilistic analysis methods, as appropriate

Not applicable.

6.2. Verification programmes (preventive maintenance, in-service inspection of main components, evaluation of ageing processes, etc.)

Not applicable.

6.3. Regulatory control activities

Nuclear safety inspections carried out in installations based in the EU Member States are a responsibility of the Member State where the installation is based.

7. ARTICLE 15 - RADIATION PROTECTION

Each Contracting Party shall take the appropriate steps to ensure that in all operational states the radiation exposure to the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed prescribed national dose limits.

7.1. Summary of laws, regulations and requirements dealing with radiation protection as applied to nuclear installations[21]

Article 2(b) of the Euratom Treaty requires Euratom to establish uniform safety standards to protect the health of the workers and of the general public and to ensure that they are applied. Article 218 of the Treaty underlines the importance for Euratom of the basic standards as these had to be determined within one year of the entry into force of the Treaty. They were first established in 1959 and the current safety standards are set out in Council Directive 96/29/Euratom of 13 May 1996 (Basic Safety Standards).

The Directive is based on the 1990 Recommendation of the International Commission on Radiological Protection (ICRP) and is consistent with the International Basic Safety Standards for Protection against Ionising Radiation and for the Safety of Radiation Sources sponsored and issued by the International Atomic Energy Agency and jointly sponsored by other five International Organisations with competence in radiation protection.

7.2. Implementation of applicable laws, regulations and requirements relating to radiation protection

7.2.1. Radiation dose limits

As regards dose limitation, the Basic Safety Standards Directive sets out dose limits for exposed workers, for apprentices and students and for members of the public. The relevant Articles of the Directive are follows:

"Article 9 – Dose limits for exposed workers

[21] See Annex 2

1. The limit on effective dose for exposed workers shall be 100 millisieverts ('mSv') in a consecutive five-year period, subject to a maximum effective dose of 50 mSv in any single year. Member States may decide an annual amount.

2. Without prejudice to paragraph 1:

(a) the limit on equivalent dose for the lens of the eye shall be 150 mSv in a year;

(b) the limit on equivalent dose for the skin shall be 500 mSv in a year. This limit shall apply to the dose average over any area of 1 cm2, regardless of the area exposed;

(c) the limit on equivalent dose for the hands, forearms, feet and ankles shall be 500 mSv in a year."

"Article 11 –Dose limits for apprentices and students

1. The dose limits for apprentices aged 18 years or over and students aged 18 years or over who, in the course of their studies, are obliged to use sources shall be the same as the dose limits for exposed workers laid down in Article 9.

2. The limit for effective dose for apprentices aged between 16 and 18 years and for students aged between 16 and 18 years who, in the course of their studies, are obliged to use sources shall be 6 mSv per year.

Without prejudice to this dose limit:

(a) the limit on equivalent dose for the lens of the eye shall be 50 mSv in a year;

(b) the limit on equivalent dose for the skin shall be 150 mSv in a year. This limit shall apply to the dose average over any area of 1 cm2, regardless of the area exposed;

(c) the limit on equivalent dose for the hands, forearms, feet and ankles shall be 150 mSv in a year.

3. The dose limits for apprentices and students who are not subject to the provisions of paragraphs 1 and 2 shall be the same as the dose limits for members of the public specified in Article 13."

"Article 13 – Dose limits for members of the public

1. Without prejudice to Article 14, the dose limits for members of the public shall be as laid down in paragraphs 2 and 3.

2. The limit for effective dose shall be 1 mSv in a year. However, in special circumstances, a higher effective dose may be authorised in a single year, provided that the average over five consecutive years does not exceed 1 mSv per year.

3. Without prejudice to paragraph 2:

(a) the limit on equivalent dose for the lens of the eye shall be 15 mSv in a year;

b) the limit on equivalent dose for the skin shall be 50 mSv in a year averaged over any 1 cm2 area of skin, regardless of the area exposed."

7.2.2. Fulfilment of conditions for the release of radioactive materials

As regards practices involving a risk from ionising radiation for the population, Article 43 and Article 44 of the Basic Safety Standards Directive require Member States to apply the fundamental principles governing operational protection of the population. In particular, Article 44 states:

"Operational protection of the population means all arrangements and surveys for detecting and eliminating the factors which, in the course of any operation involving exposure to ionising radiation, are liable to create a risk of exposure for the population which cannot be disregarded from the radiation protection point of view. Such protection shall include the following tasks:

(a) examination and approval of plans for installations involving an exposure risk, and of the proposed siting of such installations within the territory concerned, from the point of view of radiation protection;

(b) acceptance into service of such new installations subject to adequate protection being provided against any exposure or radioactive contamination liable to extend beyond the perimeter, taking into account, if relevant, demographic, meteorological, geological, hydrological and ecological conditions;

(c) examination and approval of plans for the discharge of radioactive effluents.

These tasks shall be carried out in accordance with rules laid down by the competent authorities on the basis of the extent of the exposure risk involved".

7.2.3. Steps taken to ensure that radiation exposures are kept as low as reasonably achievable

Optimisation (ALARA) Principle: The general principles of radiation protection: justification, optimisation and dose limitation are mandatory under Article 6 of the Basic Safety Standards Directive. In particular, as regards optimisation, Article 6 paragraph 3a reads:

"Each Member States shall ensure that, in the context of optimisation, all exposures shall be kept as low as reasonably achievable, economic and social factors being taken into account."

7.2.4. Estimates and records of population doses

Article 49 of the Basic Safety Standards Directive requires Member States to consider the possibility of radiological emergencies from practices subject to the Directive, and to assess the distribution of the radioactive substances dispersed and corresponding potential exposures.

7.2.5. Verification of environmental radiological surveillance facilities

In line with the implementation of Article 14 (ii) of the Convention, Article 35 of the Euratom Treaty stipulates:

"Each Member State shall establish the facilities necessary to carry out continuous monitoring of the level of radioactivity in the air, water and soil and to ensure compliance with the basic standards.

The Commission shall have the right of access to such facilities; it may verify their operation and efficiency."

The result of the checks carried out by the Member States under Article 35 of the Euratom Treaty are periodically communicated to the Commission under Article 36 of the Treaty. Commission Recommendation 2000/473/Euratom[22] aims at ensuring uniformity, comparability, transparency and timeliness of the data reported. The Commission regularly publishes summaries of the data reported by Member States. It also exercises its right of access conferred on it by Article 35 of the Euratom Treaty.[23]

Taking into account previous bilateral protocols, a Commission Communication has been published in the Official Journal on 4 July 2006[24] with a view to define some practical arrangements for the conduct of "Article 35 verification visits" in Member States. These may be amended as needed.

The primary objective of the "Article 35 verifications" is to establish the efficiency of the facilities installed for the measurement of environmental radioactivity and of radioactive discharges, and to establish the adequacy of the environmental monitoring programme. The efficiency and adequacy are assessed in relation to the overall approach developed at national level to ensure the protection of members of the public in compliance with the Basic Safety Standards[25].

Verifications are initiated:

- where and when the Commission estimates it to be appropriate
- on request (invitation) of national authorities
- on request of the European Parliament
- on request of a Member State (to verify a neighbouring Member State)

The arrangements for the conduct of verification has been discussed with Member States and laid down in bilateral protocols. Verifications may extend to all installations discharging radioactive substances into the environment such as:

- nuclear fuel cycle installations (mainly power stations and reprocessing facilities)
- research reactors,

22 OJ L-191 of 17.07.2000 p. 37.

23 See below chapter 7.2.4. Verification of environmental radiological surveillance facilities, p. 23.

24 Verification of environmental radioactivity monitoring facilities under the terms of Article 35 of the Euratom Treaty - Practical arrangements for the conduct of verification visits in Member States (2006/C 155/02), OJ C-155 of 04.07.2006 p. 2.

25 Council Directive 80/836/EURATOM, amended by Council Directive 84/467/Euratom, and replaced by Council Directive 96/29/EURATOM, see above.

- radioactive isotope production facilities,
- users of radioactive isotopes (i.e. hospitals),
- Naturally Occurring Radioactive Material (henceforth: NORM) industries discharging effluents containing enhanced levels of natural radioactivity.

Verification activities cover all facilities and provisions for monitoring/sampling of:

- discharges of radionuclides into the environment (airborne and liquid effluents)
- environmental radioactivity around installations discharging radionuclides;
- environmental radioactivity as part of a national network (regional, national level).

Environmental monitoring includes:

- routine measurement of radioactivity in air, water, soil and biota;
- provisions in case of radiological emergencies (alarms and data collection, but not emergency response planning)

Verification activities basically cover:

- Monitoring/sampling devices (operation and efficiency)
- Monitoring/sampling procedures (methodologies and representativeness).
- Data handling and management procedures (reporting and archiving).
- Consistency of source data (operational records) with values reported under Articles 36 and 37 of the Euratom Treaty.
- Quality control and assurance programmes applied to the above fields of activity (working instructions, peer review, inter-comparison and accreditation).

Since 1999, about 20 verification reports under the terms of Article 35 of the Euratom Treaty have been made publicly available with consent of the competent authorities of the Member States concerned[26]. The official results of a verification visit are laid down in a document referred to as the Main Findings. A Technical Report is annexed to it. The Main Findings are based on the observation and recommendations listed in the Technical Report, but without technical detail.

7.2.6. Regulatory control activities

Not applicable.

[26] http://ec.europa.eu/energy/nuclear/radioprotection/verification_en.htm

8. ARTICLE 16: EMERGENCY PREPAREDNESS

(1) Each Contracting Party shall take the appropriate steps to ensure that there are on-site and off-site emergency plans that are routinely tested for nuclear installations and cover the activities to be carried out in the event of an emergency.

For any new nuclear installation, such plans shall be prepared and tested before it commences operation above a low power level agreed by the regulatory body.

(2) Each Contracting Party shall take the appropriate steps to ensure that, insofar as they are likely to be affected by a radiological emergency, its own population and the competent authorities of the States in the vicinity of the nuclear installation are provided with appropriate information for emergency planning and response.

(3) Contracting Parties which do not have a nuclear installation on their territory, insofar as they are likely to be affected in the event of a radiological emergency at a nuclear installation in the vicinity, shall take the appropriate steps for the preparation and testing of emergency plans for their territory that cover the activities to be carried out in the event of such an emergency.

The primary responsibility of protecting the general public in the event of a nuclear or radiological emergency lies with the Member State authorities; however Euratom has competences to establish legislation regarding emergency preparedness and emergency response. In addition, the Commission contributes in this work by initiating and participating in international systems for radiological emergency preparedness.[27]

8.1. General description of laws, regulations and requirements for on-site and off-site emergency preparedness

8.1.1. Council Directive 96/29/Euratom – "Basic Safety Standards Directive (BSS)"

Article 50 of the Basic Safety Standards Directive, on "Intervention preparation", provides as follows:

> *"1. Each Member State shall ensure that account is taken of the fact that radiological emergencies may occur in connection with practices on or outside its territory and affect it.*
>
> *2. Each Member State shall ensure that appropriate intervention plans, taking account of the general principles of radiation protection for intervention referred to in Article 48 (2) and of the appropriate intervention levels established by the competent authorities, are drawn up at national or local level, including within installations, in order to deal with various types of radiological emergency and that such plans are tested to an appropriate extent at regular intervals.*

[27] See below Chapter 8.3. International arrangements, including those with neighbouring countries, p.27.

3. Each Member State shall ensure, where appropriate, that provision is made for the creation and appropriate training of special teams for technical, medical and health intervention.

4. Each Member State shall seek to cooperate with other Member States or non-Member States in relation to possible radiological emergencies at installations on its own territory which may affect other Member States or non-Member States, in order to facilitate the organization of radiological protection in these States."

8.1.2. Council Directive 89/618/Euratom

Council Directive 89/618/Euratom deals with informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency.

The Directive specifies two types of information that has to be given to the members of the public:

- Prior information to be given to the population groups for which Member States have drawn up intervention plans in the event of a radiological emergency;

- Information in the event of a radiological emergency, to be given to the population groups actually affected in the event of a radiological emergency and for which specific protection measures are taken.

The Directive also requires that emergency workers regularly undergo medical surveillance and are informed about their health.

8.1.3. Council Decision 87/600/Euratom

Council Decision 87/600/Euratom sets out arrangements for the early exchange of information between competent authorities in the event of a radiological emergency (ECURIE). These arrangements "apply to the notification and provisions of information whenever a Member State decides to take measures of a wide-spread nature in order to protect the general public in case of a radiological emergency" (Article 1 of the Decision). A radiological emergency may be declared either due to an accident at a facility where a significant release of radioactive material occurs or is likely to occur, or due to detection of abnormal levels of radioactivity in the environment.

Article 2(i) of this Decision sets out the actions to be taken by the Member State that initially decides to take measures as referred to in Article 1 of this Decision as follows:

(a) Forthwith notify the Commission and those Member States which are, or are likely to be, affected of such measures and the reasons for taking them;

(b) Promptly provide the Commission and those Member States which are, or are likely to be, affected with available information relevant to minimising the foreseen radiological consequences, if any, in those States.

Member States notify their "intention to take without delay measures as referred to in Article 1". The Decision also specifies the nature of the information that shall be provided and requires that the initial information is supplemented at appropriate intervals. The Commission forwards

the information it receives from a Member State to all the Member States. The Decision applies to the Member States of Euratom. It also applies to Switzerland following an agreement between Euratom and Switzerland. The Decision is broadly compatible with the Convention on Early Notification of a Nuclear Accident, as demonstrated by several exercises carried out in co-operation with the IAEA and the States participating in such exercises.

8.1.4. Regulations laying down maximum permitted levels of contamination (for future accidents)

A set of Euratom regulations[28] lay down maximum permitted levels of radioactive contamination of foodstuffs and feedingstuffs following a nuclear accident or any other case of radiological emergency. These pre-established maximum permitted levels can be made immediately applicable through the adoption of a regulation by the Commission if the latter receives official information about an accident through the ECURIE system (Council Decision 87/600/Euratom) indicating that these levels are likely to be reached or have been reached.[29]

8.2. Implementation of emergency preparedness measures, including the role of the regulatory body and other entities

8.2.1. Classification of emergency situations

Not applicable.

8.2.2. Overall emergency preparedness scheme

Not applicable.

8.2.3. On-site and off-site emergency plans of research reactors, including supporting agencies and schemes

Not applicable.

8.2.4. Measures for informing the public about emergency preparedness in the vicinity of the nuclear installations

Not applicable.

8.2.5. Conduct of emergency exercises

The Commission organises the following radiological emergency preparedness exercises within the ECURIE (European Community Urgent Radiological Information Exchange) system:

'Level 0': Daily. Technical exercise to test the availability of the equipment (PC plus software and data transmission devices) in the participating states; generated automatically by technical equipment.

[28] Council Regulation No 3954/87 of 22 December 1987, OJ L-371 of 30.12.1987 p. 11, as amended by Council Regulation No 2218/89 of 18 July 1989, OJ L-211 of 27.07.1989 p. 1; Commission Regulation No 770/90 of 29 March 1990, OJ L-83 of 29.03.1990 p. 78; Commission Regulation No 944/89 of 12 April 1989, OJ L-101 of 13.04.1989 p. 17; Council Regulation No 2219/89 of 18 July 1989, OJ L-211 of 22.07.1989 p.4.

[29] See Annex 2

'Level 1': Bimonthly. Not pre-announced. Test if the contact points in the participating states are available (a message has to be answered as 'received'); physical persons acting.

'Level 2': Bimonthly. Not pre-announced. Test if the contact points and the competent authorities in the participating states are available (a message has to be answered and the time of reaching the competent authority has to be returned); physical persons acting.

'Level 3': Once per year, pre-announced, often combined with a national exercise in a Member State or with an international exercise (full scale notification - response - additional information exercise); physical persons acting.

The ECURIE system may on request also be used as an information tool for national exercises, when time and staff issues permit.

In addition, the European Commission participates in selected international exercises organised by the Member States, the OECD-NEA or the IAEA such as the ConVex or the INEX series using the possibilities of the ECURIE system as well as - if deemed necessary - the installation of the radiation protection unit's emergency team. The ConVex series ranges from tests of reaching the contact point to full scale exercises with a hypothetical large accident scenario, somewhere in the world. The INEX series was mainly a tool to help develop/enhance appropriate systems for emergency preparedness on national and international level.

8.3. International arrangements, including those with neighbouring countries

8.3.1. ECURIE (European Community Urgent Radiological Information Exchange)

ECURIE is a 24h emergency notification and information exchange system. The system notifies the competent authorities of the participating States (currently EU Member States and Switzerland) and the Commission in case of a major nuclear accident or a radiological emergency. During an emergency the system provides an information exchange platform for the participating States in order to inform about the current and foreseeable status of the accident, meteorological conditions, national countermeasures taken, etc.

The legal basis for participation in ECURIE by the EU Member States is the EU Council Decision 87/600/Euratom and the Agreement between Euratom and non-member States of the European Union on the participation of the latter in the Community arrangements for the early exchange of information in the event of radiological emergency (Ecurie)[30]. The Commission is responsible for ECURIE management and development. The Commission maintains a 24h preparedness service in order to activate the system in the event of a nuclear or radiological emergency.[31] There is an ongoing discussion between IAEA and EC services on the issue of having one technical system for the EC/MS for notification purposes which would deal with ECURIE messages as well as the IAEA's Emercon messages.

8.3.2. EURDEP (EUropean Radiological Data Exchange Platform)

EURDEP is both a standard data format and a network for the exchange of environmental radiation monitoring data between European countries in real-time. Participation of the EU

[30] OJ C 102 of 29.4.2003, p. 2.

[31] For more information on the ECURIE system see http://rem.jrc.cec.eu.int/40.html and

Member States is based on the Recommendation 2000/473/Euratom. Participation of the various non-EU countries is on a voluntary basis. Those countries that send their national radiological monitoring data have access to the data of all the other participating countries. The system is continuously operating with a daily data exchange routine and there is a general consensus that participating in the system automatically means that the data transmissions will continue during an emergency in an elevated frequency.[32]

8.3.3. ENSEMBLE

In case of a major radiological or nuclear accident affecting Europe, national long-range radioactivity dispersion forecasts will inevitably differ because of differences in national models, differences in weather prediction methods and differences in national emergency management strategies. Differences in national long-range dispersion forecasts may cause problems at the European level, as national emergency management strategies based solely on national forecasts may not cohere with those in neighbouring countries. ENSEMBLE is a software that integrates the different weather forecasts (with the possibility to select preferred ones and also to look at specific national forecasts) and thus, with the input of radioactive release data, provides a relatively reliable prediction of the dispersion of radioactive substances with time. In this context the system addresses the issue of harmonisation and coherence of emergency management and decision-making in relation to long-range atmospheric dispersion modelling by providing a website tool to view and compare national dispersion forecasts.[33]

8.3.4. IACRNA

The European Commission participates in the Inter-Agency Committee on Response to Nuclear Accidents (IACRNA) and has concluded bilateral agreements with other international organisations on arrangements in the area of radiological emergency preparedness.

8.3.5. Other activities

Other radiological emergency preparedness activities in the Commission include training of national authorities, assistance to research activity co-ordination, regular preparedness exercises and co-operation with other international organisations and other Commission emergency services. Additionally the Commission provides an INES (the International Nuclear Event Scale) liaison officer and organises regular meetings of Member States radiological emergency preparedness authorities.

[32] For more information on the EURDEP system see http://rem.jrc.cec.eu.int/175.html

[33] For more information on the ENSEMBLE system see http://rem.jrc.cec.eu.int/177.htm

Chapter 2 (d) of the Convention – Safety of Installations

This section of the Report describes the relevant Euratom legislation, which affects the construction and operation of a nuclear facility.

9. ARTICLE 17: SITING

Each Contracting Party shall take the appropriate steps to ensure that appropriate procedures are established and implemented:

> **i. For evaluating all relevant site-related factors likely to affect the safety of a nuclear installation for its projected lifetime;**
>
> **ii. For evaluating the likely safety impact of a proposed nuclear installations on individuals, society and the environment;**
>
> **iii. For re-evaluating as necessary all relevant factors referred to in sub-paragraphs (i) and (ii) so as to ensure the continued safety acceptability of the nuclear installation:**
>
> **iv. For consulting Contracting Parties in the vicinity of a proposed nuclear installation, insofar as they are likely to be affected by that installation and, upon request providing the necessary information to such Contracting Parties, in order to enable them to evaluate and make their own assessment of the like safety impact on their own territory of the nuclear installation.**

There is no specific Euratom legislation applicable for the siting of nuclear installations in place. The siting of a nuclear installation necessarily includes taking into account factors relating to radiation protection, such as the demographic characteristics of the site. It is apparent that Article 17(ii) of the Convention relates to those factors.

Under Article 37 of the Euratom Treaty, the Community possesses competence as regards 'any plan for the disposal of radioactive waste in whatever form' if the implementation of that plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State. That fact provides sufficient grounds to conclude that Euratom possesses competence in the field covered by Article 17 of the Convention.[34]

9.1. Description of licensing process, including summary of laws, regulations and requirements relating to the siting of nuclear installations

9.1.1. Criteria for evaluating all site-related factors affecting safety

Not applicable.

9.1.2. Criteria for evaluating the nuclear safety impact of the nuclear installations on the surrounding environment and population:

Not applicable

[34] C-29/99 ECJ 2002, I-11221, 102-103.

9.2. Implementing provisions for fulfilment of the above mentioned criteria

Not applicable

9.3. Activities relating to maintenance of the continued safety acceptability of the nuclear installation, taking account of site-related factors

Not applicable

9.4. International arrangements, including those with neighbouring countries, as necessary

Not applicable

10. ARTICLE 18 AND 19: DESIGN, CONSTRUCTION AND OPERATION

Article 18: Each Contracting Party shall take the appropriate steps to ensure that:

(a) The design and construction of a nuclear installation provides for several reliable levels and methods of protection (defence in depth) against the release of radioactive materials, with a view to preventing the occurrence of accidents and to mitigating their radiological consequences should they occur;

(b) The technologies incorporated in the design and construction of a nuclear installation are proven by experience or qualified by testing or analysis;

(c) The design of a nuclear installation allows for reliable, stable and easily manageable operation, with specific consideration of human factors and the man-machine interface.

Article 19: Each Contracting Party shall take the appropriate steps to ensure that:

a) The initial authorisation to operate a nuclear installation is based upon an appropriate safety analysis and a commissioning programme demonstrating that the installation, as constructed, is consistent with design and safety requirements;

b) Operational limits and conditions derived from the safety analysis, tests and operational experience are defined and revised as necessary for identifying safe boundaries for operation;

c) Operation, maintenance, inspection and testing of a nuclear installation are conducted in accordance with approved procedures;

d) Procedures are established for responding to anticipated operational occurrences and to accidents;

e) Necessary engineering and technical support in al safety-.related fields is available throughout the lifetime of a nuclear installation;

f) Incidents significant to safety are reported in a timely manner by the holder of the relevant licence to the regulatory body

g) Programmes to collect and analyse operating experience are established, the results obtained and the conclusions drawn are acted upon and that existing mechanisms are used to share important experience with international bodies and with other operating organizations and regulatory bodies;

h) The generation of radioactive waste resulting from the operation of a nuclear installation is kept to the minimum practicable for the process concerned, both in activity and in volume, and any necessary treatment and storage of spent fuel and waste directly related to the operation and on the same site as that of the nuclear installation take into consideration conditioning and disposal.

In this regard there is no Euratom legislation in place. The design, construction and operation of nuclear installations lie within the competence of the national authorities. However, in its Judgement of 10 December 2002 the Court stated, that "*the measures required by Articles 18 and 19 of the Convention concerning the design, construction and operation of nuclear installations can be the subject of the provisions which the Member States lay down to ensure, in accordance with the first paragraph of Article 33 of the Euratom Treaty, compliance with the basic standards. However, the Commission has competence to make recommendations for harmonising those provisions, as is clear from the second paragraph of Article 33 of the Euratom Treaty, interpreted in the light of the considerations set out in paragraphs 75 to 83 of the present judgment. The Member States are required to assist in drawing up those recommendations through the communications referred to in the third paragraph of Article 33 of the Euratom Treaty*".[35]

Article 37 of the Euratom Treaty indirectly may, however, affect the national licensing process. According to Article 37 and to the Recommendation 99/829/Euratom on its application each Member State shall provide the Commission with such "general data" relating to any plan for the disposal of radioactive waste in whatever form as will make it possible to determine whether the implementation of such plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State. This data should be sent one year – whenever possible – but not less than six months before granting any authorisation for the disposal of radioactive waste by competent authorities or before the start-up of those operations for which no disposal authorisation is granted. In addition, in the "Cattenom judgement" of the Court[36] the latter confirmed that the Commission must be provided with General Data relating to the plan for the disposal of radioactive waste before definitive authorisation for such disposal is granted. Thus, the question when a submission of General Data under Art. 37 Euratom must take place and when the subsequent Commission's opinion is issued is not directly related to the final siting decision. The way and the sequence competent authorities grant their different authorisations (siting, construction, commissioning, discharges of radioactive effluents, decommissioning, etc.) may be completely different from Member State to Member State.

The Commission shall deliver their opinions on planned disposal of radioactive waste within six months, after consulting the group of experts referred to in Article 31 of the Euratom Treaty; t meaning of "authorisation for the disposal of radioactive waste" being of course "authorisation for the discharge of radioactive effluents" (cf. original linguistic versions of the Euratom Treaty). However, while Article 37 refers to the same expert group established under Article 31, in practice it was decided at a very early stage to have a specific group of experts assigned to this task, called Article 37 group of experts.

These opinions contain also the results of the analysis of the possible radiological consequences of unplanned releases which may occur in the event of an accident. In practice the general data provided by the Member States refer to the results of the safety studies on which the national

35 C-29/99 ECJ 2002, I-11221, 102-103.

36 Case C-187/87

authorities base the granting of permits for the siting, construction and operation of nuclear installations. These data cover geographical, topographical and geological features of the site and region, seismology, hydrology, meteorology, natural resources, other activities in the vicinity of the site.

Commission opinions pursuant to Article 37 of the Euratom Treaty are published in the Official Journal of the European Communities but in order to be rendered fully effective they must be brought to the notice of the State delivering the authorisation, before the issue of such authorisation. In total, the Commission issued fifty-two opinions between July 1994 and December 2003 from eight Member States covering almost the entire nuclear fuel cycle and leading to twelve infringement procedures.

Due to the experience gained but especially because of the closure and imminent decommissioning of a large number of nuclear power plants in the enlarged EU, a new Commission Recommendation on the application of Article 37 was adopted on 6 December 1999[37] replacing the Recommendation of 12 December 1990[38].

Commission reports on the application of Article 37 of the Euratom Treaty are sent periodically the Council and the EP. The latest report dates of 14 March 2005[39] and explains the background, the different stages and timetable of the procedure, the structure of the reports. It entails information on the contents of the opinions, infringement procedures and conclusions from the application of Article 37 of the Euratom Treaty.

[37] Commission Recommendation 1999/829/Euratom of 6 December 1999 on the application of Article 37, OJ L 324, 16.12.1999, p 23.

[38] Commission Recommendation 91/4/Euratom on the application of Article 37, OJ L 6, 9.1.1991, p 16.

[39] Report from the Commission to the Council and the European Parliament, Report on the application of Article 37 of the Euratom Treaty, July 1994 to December 2003, SEC(2005)343, of 14 March 2005 (COM (2005) 85 final).

SECTION III

EURATOM ACTIVITIES AIMING AT IMPROVING SAFETY

11. INTRODUCTORY REMARKS

11.1. (Non-binding) Council Resolutions and Conclusions in the field of nuclear safety

The European Atomic Energy Community (Euratom) has been active in the field of nuclear safety for over 25 years, through the action of its institutions, in particular the Commission and the Council, at different levels. The commitment of Euratom and its Member States to a high level of nuclear safety and to the safe management of spent fuel and radioactive waste is reflected, in particular, in the existing Euratom legislative framework adopted under the Euratom Treaty as well as in the relevant Council Resolutions and conclusions of the European Council.

Bearing in mind that nuclear safety is a national responsibility exercised where appropriate in an EU-framework; decisions concerning safety actions and the supervision of nuclear installations remain solely with the operators and national authorities.[40] Community added value has been recognized in building common views on nuclear safety issues, and Council resolutions have paved the way for co-operation between Member States and the Commission.

In the Council Resolution of 22 July 1975 on the technological problems of nuclear safety[41], the European Council considered that the technological problems relating to nuclear safety, in view of their environmental and health implications, called for appropriate action at Community level which would take into account the prerogatives and responsibilities assumed by national authorities.It recognised that it was the Commission's responsibility to act as a catalyst in initiatives taken at international level with regard to nuclear safety. As a result of this resolution, the Commission set up several expert groups dealing with nuclear safety matters. These groups, in which representatives of the safety authorities of the Member States participate, have actively contributed to the harmonisation of nuclear safety practices.

The Council Resolution of 18 June 1992 on the technological problems of nuclear safety[42] encouraged the continuation of the process of consultation and co-operation established by the resolution of 1975, and recommended its extension to third countries, notably to the Central and Eastern European Countries (hereinafter: CEEC) and the Newly Independent States comprising the Republics of the former Soviet Union as a result of its break-up (hereinafter: NIS). It further requested the Member States and the Commission to adopt as the fundamental and priority objective of Community cooperation in the nuclear field, in particular with the other European countries, especially those of Central and Eastern Europe and the Republics of the former Soviet Union, that of bringing their nuclear installations up to safety levels equivalent to those in practice in the Community and to facilitate the implementation of the safety criteria and requirements already recognized throughout the Community. Following this Resolution,

[40] Council Conclusions on Nuclear Safety and Safe Management of Spent Nuclear Fuel and Radioactive Waste, 2798th ECONOMIC and FINANCIAL AFFAIRS Council meeting, Brussels 8 May 2007.

[41] OJ C-185 of 14.08.1975, p. 1

[42] OJ C-172 of 08.07.1992, p. 2

participation in the different expert groups was extended to representatives of the CEECs and the NIS.

The Cologne European Council in June 1999 asked the Commission to ensure that high safety standards are applied in Central and Eastern Europe. Following on from this request, the safety of nuclear installations in the candidate countries[43] was evaluated by the Commission and the Council in 2001, making it possible to arrive at a European perspective with regard to nuclear safety agreed by the then fifteen Member States and the Commission.

The Laeken European Council in December 2001 marked the transition from reflection conducted in the perspective of enlargement to that of a global political vision at the level of the enlarged EU. One of the conclusions of this meeting was that *"the European Council undertakes to maintain a high level of nuclear safety in the Union. It stresses the need to monitor the security and safety of nuclear power stations. It calls for regular reports from Member States' atomic energy experts, who will maintain close contacts with the Commission"*.

In the framework of the discussions on recent Commission proposals for Council Directives (Euratom) setting out the basic obligations and general principles on the safety of nuclear installations and on the management of spent nuclear fuel and radioactive waste[44], the Council of the European Union, at its 2593rd meeting held in Luxembourg on 28 June 2004, adopted clear Conclusions on nuclear safety and on the safety of the management of spent nuclear fuel and radioactive waste, where, among other, the following statements were made:

> *"(the Council) urges Member States together with the Commission:*
>
> *to avail themselves in particular of the possibilities offered by the review meetings under the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management in 2005 and 2006 respectively,*
>
> *to assess the results achieved under these Conventions, including at previous Conferences of the Parties,*
>
> *to take stock of the outcome of the work conducted by national nuclear regulatory authorities in multinational fora, including in the WENRA framework,*
>
> *and on that basis*
>
> *to engage in a wide ranging consultation process facilitating the choice of instrument(s), in the framework of the Euratom Treaty, that can contribute more effectively to achieving nuclear safety and the safe management of spent fuel and radioactive waste, without excluding any instrument and in line with the principles of better law making."*

[43] The fifth EU Enlargement comprised the largest number of countries ever admitted at one time: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia acceded to the EU on 1st May 2004, Romania and Bulgaria joined in on 1st January 2007.

[44] Proposal for a Council Directive setting out basic obligations and general principles on the safety of nuclear installations (COM(2003) 32 final

The follow-up to the Council conclusions and resolutions has been ensured in the framework of the European Atomic Energy Community (Euratom): The Brussels European Council of 8/9 March 2007 confirmed that it is for each and every Member State to decide whether or not to rely on nuclear energy and stressed, that this has to be done while further improving nuclear safety and the management of radioactive waste.[45] To this effect the Council envisages the creation of a high-level group on nuclear safety and waste management and suggested that broad discussion takes place among all relevant stakeholders on the opportunities and risks of nuclear energy.

Council Conclusions, Brussels, 8 May 2007. The Council adopted Conclusions on Nuclear Safety and Safe Management of Spent Nuclear Fuel and Radioactive Waste on the basis of the Presidency Conclusions of the Brussels European Council of 8./9. March 2007.[46] In these recent conclusions the Council recommended the establishment of a High Level Group on Nuclear Safety and Waste Management at EU-level aimed at furthering a common approach on the areas

- Safety of nuclear installations,
- Safety of the management of spent fuel and radioactive waste and
- Financing of the decommissioning of nuclear installations and safe management of spent fuel and radioactive waste.

The High Level Group should be composed of senior representatives from safety authorities, regulatory or administrative bodies of the Member States, having competence in the areas covered by the High Level Group, and a representative of the Commission. With the aim of maintaining and further improving the safety of nuclear installations, the safety of the management of spent fuel and radioactive waste, and the financing of the decommissioning of nuclear installations and safe management of spent fuel and radioactive waste, the Council proposed that the following list of possible actions be addressed in the areas mentioned above, as deemed practicable, by the High Level Group. This list comprises mainly actions concerning harmonised approaches, shared knowledge and joint efforts, co-operation and openness, transparency.

11.2 Expert groups aiming at improving safety

The Commission has worked with the support of expert groups for more than 30 years and has launched many studies and initiatives in the field of the nuclear safety. The Nuclear Regulators' Working Group (NRWG), which met last in June 2005, includes representatives of nuclear regulatory authorities from EU Member States and Candidate States of Central and Eastern Europe (hereinafter: CEEC).The Reactor Safety Working Group (RSWG), which included all the EU regulatory bodies and industry was discontinued in 1998.

Their approach to "harmonisation" consists of a comparison of national practices, identification of common features, and analysis of the safety relevance of differences. Common technical opinions are expressed on certain safety issues, and, while these are not safety "standards", they

[45] Council of the European Union, Brussels, 8-9 March 2007: Presidency Conclusions (9 March 2007: Brussels), Council Document No 7224/07 of 2 May 2007, REV 1, CONCL 1.

[46] Council Conclusions on Nuclear Safety and Safe Management of Spent Nuclear Fuel and Radioactive Waste, 2798th ECONOMIC and FINANCIAL AFFAIRS Council meeting, Brussels 8 May 2007.

are expected to promote good practice. On-going activities include safety aspects of ageing, applications of risk-based approaches and innovative technologies. These activities have been widely documented and published either as technical publications or as Communications to the Council and the European Parliament.

The CONCERTation on European Regulatory Tasks (hereinafter: CONCERT), formed in 1992, was a unique forum that brought together EU, CEEC and Newly Independent States (hereinafter: NIS) nuclear regulators to share experience and to further the progress of assistance and co-operation activities in general. Among its other activities, discussions within this group significantly contributed to achieving the objectives of the Nuclear Safety Convention by forming a common regulatory view on nuclear safety issues and increasing a safety culture.

In 2005 activities of all expert groups were reviewed in order to reorganise the tasks and avoid duplications. Following the adoption of the Council conclusions their activities will be integrated in the work of the High Level Group on Nuclear Safety and Waste Management[47].

11.3. Euratom loans

In a Decision dated 21 March 1994[48] the Council authorised the Commission to make borrowings, the proceeds of which would be assigned, in the form of loans, to the funding of projects to increase the safety and efficiency of the nuclear facilities in certain CEEC and NIS.

12. ACHIEVEMENTS AND CHANGES IN SAFETY-RELATED ACTIVITIES SINCE THE PREPARATION OF THE PREVIOUS REPORT

12.1. Follow-up of Council Conclusions: Working Party for Nuclear Safety established by the Council of the European Union

Following June 2004 Council conclusion, a wide ranging consultation process was initiated aimed to identify new instrument(s) that can contribute more effectively to further improving nuclear safety and the safety of the management of the spent fuel and radioactive waste, without excluding any instrument in the framework of the Euratom Treaty and in line with the principles of better law making.

The *Ad Hoc* Working Party on Nuclear Safety (WPNS) has been activated by the Council as a consequence of the Council conclusions on Nuclear Safety and Safe management of spent fuel and radioactive waste[49] reached in June 2004, after long negotiations on Commission proposals for Council (Euratom) Directives setting out basic obligations and general principles on the safety of nuclear installations and on the management of spent fuel and radioactive waste.

On 3 December 2004 the Council agreed an Action Plan[50] for following up on the Council conclusions, which called for an "extensive consultation" with stakeholders before any

47 See below, Chapter 12.1., p. 41.

48 Council Decision of 21 March 1994 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, OJ L-84, 29.03.1994 p 4.

49 Council Document 10823/04.

50 Council Document 15955/04.

instrument(s) in these fields were developed in the framework of the Euratom Treaty. This Plan is divided into three main action areas with a few elements are proposed for further study:

- Actions concerning the safety of nuclear installations
- Actions concerning safety of the management of spent fuel and radioactive waste
- Actions concerning the financing of the decommissioning of nuclear installations and safe management of spent fuel and radioactive waste

During the following years the Member States together with the Commission reviewed the outcome of the work conducted by national nuclear regulatory authorities in multinational fora, such as the OECD/NEA and the IAEA, including in the WENRA framework, and in the past review meetings under the Convention on Nuclear Safety and the Joint Convention. In December 2006 produced a final report serving as a basis for the consultation process, in particular taking into account the work conducted by national nuclear regulatory authorities to reach harmonised safety approaches.[51]

12.2 High-Level-Group on Nuclear Safety and Waste Management

Following the Council Conclusions of 8 May 2007[52] a "European High Level Group for Nuclear Safety and Waste Management (High Level Group)" was established by Commission Decision of 17 July 2007. The first meeting is intended to be held in autumn 2007.[53] The High Level Group will build on the work carried out by European Union Member States and the Commission in the "Working Party on Nuclear Safety (WPNS)" during 2005 and 2006 which aimed at improving the nuclear safety within the European Union. The High Level Group should bring together the most senior representatives from the regulatory or safety authorities of the European Union Member States having competence in the areas covered, and a representative of the European Commission with the aim of maintaining and further improving the safety of nuclear installations and the safety of the management of spent fuel and radioactive waste. The work of the High Level Group will help to progressively developing common understanding and, eventually, serve as basis for the EURATOM legislation in the field of nuclear safety.

12.3 Studies undertaken by the European Union in the area of nuclear safety

International cooperation, the identification and exchange of best practices as well as the pooling of expertise are well recognised means to significantly improve nuclear safety. International organisations such as the IAEA or the OECD/NEA are providing valuable platforms in this regard and that is why the Commission is actively contributing to those fora. However, these contexts have their natural limitations whenever it comes to the implementation of the conclusions identified. The means and structures of the European Union offer unique possibilities to address nuclear safety issues at all levels at EU level whenever this is judged to provide advantages and cost efficiency compared to purely national solutions. The Commission therefore continuously aims at analysing where European solutions might contribute to the overall aim to achieve a high level of safety.

51 Council of the European Union, Brussels, 20 January 2005. 5574/05 ATO 11.

52 See above Chapter 11.1.(Non-binding) Council Resolutions and Conclusions in the field of nuclear safety

53 To be updated before the final submission to IAEA Secretariat in September 2007

The following issues qualify for potential European solutions:

- The expected fading out of nuclear knowledge,
- the perceived need for improvements in operational experience feedback loop and
- the harmonised use of performance indicators to measure the achieved level of safety.

The Commission has therefore ordered studies to perform a stocktaking of the situation in the EU and to analyse whether in how European initiatives could provide an added value.

12.3.1. Study on "Incident reporting and follow up"

Working groups of international organisations such as the OECD/NEA have concluded that further work should be done in connection with exchange of information on implementation of lessons learned through nuclear incidents/events in order to reinforce the existing instruments on operating experience assessment.

12.3.2. Study on "Monitoring the level of safety"

In order to monitor the safety level of nuclear installations, Safety Performance Indicators (hereinafter: SPIs) play an important role. A variety of different systems are used world-wide by nuclear regulators and operators. Defining Safety Performance Indicators is not an easy task and therefore the country-specific methods vary significantly. Many countries have their own programmes and methods of SPIs, which are often developed by operators of nuclear power plants themselves or by regulators. There might be also requests from the public to get information about the safety level of the installations.

In this regard the Commission contracted a study on "Nuclear Safety Performance Indicators" in the beginning of 2007. The project should be finalised by summer 2008. The purpose of the study is to analyse and evaluate the use of SPIs by nuclear regulators and operators in the EU, and based on those results, identify the best practices as well as provide recommendations of their optimal use.

12.4. Actions taken by the European Union in the area of nuclear safety in Central and Eastern Europe and in the Newly Independent States

The European Communities financed two major instruments improving the level of nuclear safety in Central and Eastern European Countries (CEEC) and Newly Independent States (NIS):

- The PHARE programme was one of the three pre-accession instruments financed by the European Union to assist the applicant countries of CEEC in their preparations for joining the European Union, and
- The TACIS programme for the NIS to encourage democratisation, the strengthening of the rule of law and the transition to a market economy. The states are as follows: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Mongolia, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Since 1 January 2007, external cooperation on nuclear safety, as well as on physical protection and safeguards, is mainly financed through the new Instrument for Nuclear Safety Cooperation,

which replaces the former TACIS programme. Limited external cooperation in specific subjects may also be funded through other Community instruments, like the Instrument on Pre-accession and the Instrument for Stability.

12.4.1. PHARE

Originally created in 1989 as the "Poland and Hungary: Assistance for Restructuring their Economies (PHARE)" programme, Phare has expanded from Poland and Hungary to cover ten countries. It assisted the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia, as well as acceding countries Bulgaria and Romania with around € 230 million (this figure does not include the support for the decommissioning of certain reactors). More than 300 projects have been funded covering a wide range of issues related to nuclear safety. The Phare nuclear safety programme has undoubtedly contributed to efforts to improve nuclear safety in Central and Eastern European Countries. In particular the assistance provided have helped to strengthen independent regulatory authorities in the region, to improve the level of design and operational safety, including provision of equipment, and to improve the situation of radioactive waste management.

Until 2000 the countries of the Western Balkans (Albania, the Republic of Macedonia, and Bosnia-Herzegovina) were also beneficiaries of Phare. However, as of 2001 the CARDS programme (Community Assistance for Reconstruction, Development and Stability in the Balkans) has provided financial assistance to these countries, the Phare nuclear safety programme underwent some re-orientation. Given that all 10 countries which previously were eligible for the Phare programme became Member States of the European Union, substantial changes were being made to the scope of the Phare programme. 2003 was the final programming year, but contracting of projects and payments based on these contracts continued until 2006.

12.4.2. TACIS

Since the earlier 90's the EU assists the New Independent States having emerged from the collapsed USSR in improving nuclear safety. This has been achieved through the TACIS Nuclear Safety Programme[54] which provided technical assistance in promoting safety culture, in supporting the reform of the regulatory framework, developing waste management policies and assisting in the implementation of efficient safeguards. The EU is also contributing to the international efforts to solve particular issues such as the legacies of the Chernobyl accident[55] and of nuclear waste resulting from the dismantling of the North Russia Naval Fleet[56].

The implementation of the TACIS programme in the recent years has been enhanced through the dedicated effort towards an increased budget to be contracted and shortening of the implementation phases. Notably the volume of funds contracted in 2006 is close to 80 Mio€ (52

[54] 1.3 billion Euros in the period 1991-2006 including 205 million Euros for CSF and 40 million Euros for the nuclear part of the NDE.

[55] The Chernobyl Shelter Fund, constituted in 1997, is managed by the EBRD to implement the project for converting the existing Chernobyl sarcophagus into a safe and environmentally stable system. In total the Commission has pledged a contribution of € 190.5 million, of which the full amount has already been transferred. In May 2005, a new pledge had been made by the Commission for a total amount of € 49.1 million. In 2007, the Commission has paid the first part (14.4 M€) of this pledge.

[56] The management of spent nuclear fuel and radioactive waste from the nuclear submarines of the Northern Fleet in North West Russia is covered by the nuclear part of a separate programme - managed by EBRD - the Northern Dimension Environmental Partnership (NDEP).

projects) and in the period 2003-2005, 155 projects have been launched for a total amount of 194 Mio€.

In the recent years, the promotion of safety culture has been centred on the implementation of Plant Improvement Projects (hereinafter: PIP) for most of Russian and Ukrainian NPPs (7 PIP in Russia for 71 Mio€ and 6 PIP in Ukraine for 66 Mio€ in execution or planned). Amongst others, these projects deal with the control-command of the reactor, the improvement of the primary circuit and the treatment of waste. An extended and sustained cooperation has also been established with the regulatory authorities of these countries – SNRCU in Ukraine, Rostechnadzor in Russia as well as the regulators of other CIS countries like Armenia and Kazakhstan. Projects are carried out with consortia of European Technical Support Offices which aim at transferring methodologies and knowledge in the licensing activities. In Armenia, while the European Commission maintains the objective of achieving an agreement with the Armenian authorities about a closure date of the Medzamor Power Plant, the TACIS programme supports the most urgent safety measures at plant level. These are carefully co-ordinated with the other international donors, under the aegis of the IAEA.

The TACIS regulation ended in December 2006.

12.4.3. Instrument for Nuclear Safety Cooperation

The Council of Ministers has agreed on a new regulation, based upon Article 203 of the Euratom Treaty, the "Instrument for Nuclear Safety Cooperation", which will cover the period 2007-2013. The instrument has a financial reference amount of half a billion Euros for cooperation actions with third countries. Its implementation will be more flexible than the TACIS programme and will have an extended geographical coverage. A new strategy is under development which concentrates on Russia and Ukraine during the first years and subsequently expands the cooperation with third countries. Success in the implementation requires reinforced cooperation with the beneficiaries to increase ownership and co-financing and to prepare larger dissemination of the project content in agreement with the strategies of the concerned countries. The EU action is not only limited to Nuclear Safety, it concerns also security and safeguards.

12.5. Decommissioning support of the European Union

During their accession negotiations Lithuania, Slovakia and Bulgaria have committed themselves to the early closure of units 1 and 2 of the Ignalina nuclear power plant in Lithuania, of units 1 and 2 of the Bohunice V1 nuclear power plant in Slovakia and of Units 1 to 4 of the Kozloduy nuclear power plant in Bulgaria. The commitments were laid down in the corresponding Treaty of Accession and related Protocols (Act of Accession for Lithuania[57] and Slovakia[58] and the Treaty of Accession for Bulgaria[59]).

[57] Protocol No 4 on the Ignalina nuclear power plant in Lithuania, Act of Accession, OJ L 236, 23.06.2003.

[58] Protocol No 9 on unit 1 and unit 2 of the Bohunice V1 nuclear power plant in Slovakia, Act of Accession, OJ L 236, 23.06.2003.

[59] Article 30 of the Protocol of the Treaty of Accession concerning the conditions and arrangement for admission of the republic of Bulgaria and Romania to the European Union, OJ L 157, 21.6.2005.

In order to support the efforts of the Member States in this regard the EU provides substantial financial assistance. Two new Council Regulations on the decommissioning support to Lithuania and the Slovak Republic[60] indicate the scope of this financial support:

- the safe maintenance of the shut-down plant prior to dismantling,
- the actual decommissioning and waste management activities,
- measures in the field of replacement capacity, energy efficiency and supply, which are consequential to the early closure and decommissioning of the NPPs, such as
  - measures for the environmental upgrading in line with the *acquis*,
  - modernisation measures of conventional capacity to replace the production capacity of closed down NPP reactors and
  - other measures which contribute to the necessary restructuring, environmental upgrading and modernisation of the energy production, transmission and distribution sectors in the Member state as well as to enhancing the security of energy supply and improving energy efficiency in Lithuania.

In order to support the early decommissioning efforts related to four units at Kozloduy Nuclear Power Plant the Community supports Bulgaria on the basis of the Accession Treaty of Bulgaria and the adopted EU Financial Framework for 2007 – 2013. At present the financial assistance of the Community is limited to the year 2009.

The amounts for this assistance (244 Mio Euro in the year 2007) are not based on a specific proportion of the estimated costs, but recognise the extraordinary burden placed on the Member State by the shutdown commitment, and are to some extent an expression of solidarity between the Union and the Member State.

12.6. Recent key developments in safety-related search in the 6th research Framework Programme

- NURESIM – Integrated Project on numerical simulation of reactor behaviour (neutronics, thermal-hydraulics)[61]
- PERFECT – Integrated Project on multiscale modelling of radiation effects on reactor internals[62]
- EURANOS – Integrated Project on European approach to nuclear and radiological emergency management and rehabilitation strategies[63]

60 Council Regulation (EURATOM) No 549/2007 of 14 May 2007 on the implementation of Protocol No 9 on Unit 1 and Unit 2 of the Bohunice V1 nuclear power plant in Slovakia, OJ L 411 of 30.12.2006 and Council Regulation (EC) No 1990/2006 of 21 December 2006 on the implementation of Protocol No 4 on the Ignalina nuclear power plant in Lithuania, OJ L-27 of 02.02.2007, p. 7.

61 For further information see http://ec.europa.eu/research/energy/fi/fi_cpa/other/article_3865_en.htm

62 For further information see http://ec.europa.eu/research/energy/fi/fi_cpa/other/article_2538_en.htm

63 For further information see http://ec.europa.eu/research/energy/fi/fi_cpa/rpr/article_2531_en.htm or http://www.euranos.fzk.de/

- SAREnet – Network of Excellence on severe accidents

12.7. Council Directive 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel

The new Council Directive 2006/117/Euratom lays down a Community system of supervision and transboundary shipments of radioactive waste and spent fuel, so as to guarantee an adequate protection of the population and workers.. The Directive sets out and lists a number of strict criteria, definitions and procedures which need to be applied when transporting radioactive waste and spent fuel.

The Directive entered into force on the 25 December 2006 and requires implementation by the Member State until the 25 December 2008. The Directive 92/3/Euratom will be repealed as from 25 December 2008.

13. FUTURE SAFETY-RELATED ACTIVITIES AND PROGRAMMES PLANNED OR PROPOSED FOR THE PERIOD UNTIL PREPARATION OF THE NEXT REPORT

13.1. Euratom 7th Framework Programme on research and training

The Community supports nuclear safety-related research through the Framework Programme of the European Atomic Energy Community (Euratom). Article 7 of the Euratom Treaty foresees the establishing of multi-annual Community research and training programmes in the fields of nuclear energy and uses of radiation. A significant part of this research falls within the scope the Convention.

The Euratom 7th Framework Programme on research and training activities 2007-2011 (hereinafter: FP7)[64] has recently been launched[65]. However, at the time of writing, no research (indirect actions) is yet being funded and all on-going projects are those contracted under the 6th Framework Programme 2002-2006 (hereinafter: FP6). For more details on research funded under FP6, refer to the relevant Europa and Cordis Web pages[66] and to the Euratom report to the 3rd review meeting of contracting parties. Annex I.B to Council Decision 2006/970/Euratom establishing Framework Programme 7 (FP7) on the "Scientific and technological objectives, themes and activities" covering "nuclear fission and radiation protection" – indirect actions identifies the priority areas of research.

As for FP6, FP7 is composed of two Specific Programmes:

64 Council Decision 2006/970/Euratom of 18 December 2006, OJ L 400 of 30.12.2006 p. 60, concerning the seventh Euratom Framework Programme for nuclear research and training activities (2007 to 2011); Council Decision 2006/976/Euratom of 19 December 2006, OJ L 400 of 30.12.2006, p.404, concerning the Specific Programme implementing the seventh Euratom Framework Programme for nuclear research and training activities (2007 to 2011), Council Regulation (Euratom) No 1908/2006 of 19 December 2006, OJ L 400 of 30.12.2006, p.1; laying down the rules for the participation of undertakings, research centres and universities in action under the Euratom seventh Euratom Framework Programme and for the dissemination of research results (2007 to 2011); Council Decision 2006/977/Euratom of 19 December 2006, OJ L 400 of 30.12.2006, p.434 , concerning the Specific Programme to be carried out be means of direct actions by the Joint Research Centre implementing the seventh Euratom Framework Programme for nuclear research and training activities (2007 to 2011).

65 For further information see http://ec.europa.eu/research/fp7/index_en.cfm

66 For further information see http://ec.europa.eu/research/energy/fi/ article_1121_en.htm

- Specific Programme for nuclear research and training activities implemented through indirect actions

- Specific Programme for research and training activities implemented by direct actions and carried out by the Commission's Joint Research Centre (JRC)[67]:

In September 2007, a European Technology Platform will be launched covering research, development and deployment in the broad field of nuclear systems and safety. One of the three pillars of this platform will be concerned with the operational safety of current generations of Light Water Reactors (LWR). The platform will coordinate and optimise research integration of the major European stakeholders in this field.

13.1.1 Specific Programme for nuclear research and training activities implemented through indirect actions

Annex I.B to Council Decision 2006/970/Euratom establishing Framework Programme 7 (FP7) on the "Scientific and technological objectives, themes and activities" covering "nuclear fission and radiation protection" – indirect actions identifies the following priority areas of research:

a) Reactor systems: Research to underpin the continued safe operation of all relevant types of existing reactor systems (including fuel cycle facilities), taking into account new challenges such as life-time extension and development of new advanced safety assessment methodologies (both the technical and human element) including as regards severe accidents, and to assess the potential, the safety and waste-management aspects of future reactor systems, in the short and medium term, thereby maintaining the high safety standards already achieved within the EU and considerably improving the long-term management of radioactive waste.

b) Radiation protection: Research, in particular on the risks from low doses, on medical uses and on the management of accidents, to provide a scientific basis for a robust, equitable and socially acceptable system of protection that will not unduly limit the beneficial and widespread uses of radiation in medicine and industry and research to minimise the impact of nuclear and radiological terrorism and diversion of nuclear material.

These themes are developed further in the Specific Programme (refer to Annex to Council Decision 2006/976/Euratom). The importance of research in the area of nuclear safety in general is emphasised throughout the text.

13.1.2. Specific Programme for research and training activities implemented by direct actions and carried out by the Commission's Joint Research Centre (JRC)

The JRC multi-annual work programme 2007-2013[68] under the European Union's Seventh Framework Programme(FP7) and the Seventh Framework Programme of the European Atomic Energy Community (Euratom), includes activities in the nuclear area regarding reactor safety, waste management, safeguards and radiation monitoring–centre on cross-border aspects and critical issues that require a common or harmonised EU response. Major objectives are to further knowledge on the safety and reliability of nuclear energy production and reactor systems, with particular consideration to sustainability and control.

[67] The JRC is a Directorate-General of the Commission and provides independent scientific and technical advice to the Commission and EU Member States in support of EU policies.

[68] For the complete Work programme see: http://www.jrc.ec.europa.eu/download/mawp2007-2013.pdf

The JRC is fully involved in international efforts for advanced nuclear reactor safety. Research is primarily centred on the long-term safe operation of existing Western and Russian-designed reactor types, as well as new fuel cycle systems and reactor designs and research on the safety of nuclear fuel.[69]

13.2. Nuclear Illustrative Programme (PINC)

The Commission adopted a Strategic Energy review on the 10th of January 2007. A Communication on nuclear energy ("nuclear illustrative programme", otherwise know from its French acronym as "PINC") is a part of this package. A publication of such communication is periodically required by the Euratom Treaty[70].

The PINC contributes to the on-going energy debate within the EU with respect to the viability of nuclear energy and to open a discussion on all its various aspects. It provides a basic economic analysis and explores the conditions necessary for the development of nuclear energy in Europe in terms of safety of nuclear installation and of the nuclear fuel cycle in order to increase public acceptability of this form of energy.

The main Commission proposal was the establishment of an EU High Level Group on Nuclear Safety with the mandate of progressively developing common understanding and, eventually, additional European rules, on nuclear safety and management of highly radioactive waste.

The adoption and publication of the final version of the PINC is expected for September 2007.

13.3. Draft Council Directive on Basic Safety Standards for the Protection of Workers and the General Public

The European Commission has undertaken the revision of the Basic Safety Standards Directive and the consolidation of all other Directives in one single directive. The Commission actively participates in the process for revision of the Inter-Agency Basic Safety Standards[71] with a view to eventual co-sponsorship.

69 For further information see: http://www.jrc.ec.europa.eu/

70 Art. 40 Euratom Treaty: In order to stimulate action by persons and undertakings and to facilitate coordinated development of their investment in the nuclear field, the Commission shall periodically publish illustrative programmes indicating in particular nuclear energy production targets and the type of investments required for their attainment.

71 International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, jointly sponsored by FAO, IAEA, ILO, OECD/NEA, PAHO, WHO, Safety Series No. 115, International Atomic Energy Agency, Vienna, 1996

ANNEX 1

“Declaration by the European Atomic Energy Community pursuant to Article 30 paragraph 4 (iii) of the Nuclear Safety Convention"

The following States are at present members of the European Atomic Energy Community: the Kingdom of Belgium, the Czech Republic, the Kingdom of Denmark, the Federal Republic of Germany, the Republic of Estonia, the Hellenic Republic, the Kingdom of Spain, the French Republic, Ireland, the Italian Republic, Republic of Cyprus, the Republic of Latvia, the Republic of Lithuania, the Republic of Hungary, the Republic of Malta, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the Republic of Austria, the Republic of Poland, the Portuguese Republic, the Republic of Slovenia, the Slovak Republic, the Republic of Finland, the Kingdom of Sweden, the United Kingdom of Great Britain and Northern Ireland.

The Community declares that Articles 1 to 5, Article 7 and Articles 14 to 35 of the Convention apply to it.

The Community possesses competences, shared with the abovementioned Member States, in the fields covered by Article 7 and Articles 14 to 19 of the Convention as provided for by the Treaty establishing the European Atomic Energy Community in Article 2(b) and the relevant Articles of Title II, Chapter 3, entitled "Health and Safety".”

ANNEX 2

List of the "*acquis communautaire*" on the basis of the Euratom Treaty

1. Radiation protection provisions of the Euratom Treaty

Communication 2006/C/155/02 from the Commission on Verification of environmental radioactivity monitoring facilities under the terms of Article 35 of the Euratom Treaty — Practical arrangements for the conduct of verification visits in Member States, Official Journal C-155 of 4 July 2006, page 2

Commission Recommendation 2004/2/Euratom of 18 December 2003 on standardised information on radioactive airborne and liquid discharges into the environment from nuclear power reactors and reprocessing plants in normal operation, Official Journal L-002 of 6.1.2004 page 36;

Commission Recommendation 2000/473/Euratom of 8 June 2000 on the application of Article 36 of the Euratom Treaty concerning the monitoring of the levels of radioactivity in the environment for the purpose of assessing the exposure of the population as a whole, Official Journal L-191 of 27.7.2000, page 37;

Commission Recommendation 99/829/Euratom of 6 December 1999 on the application of Article 37 of the Euratom Treaty, Official Journal L-324 of 16.12.1999 page 23;

Commission Recommendation 91/444/Euratom of 26 July 1991 on the application of the third and fourth paragraphs of Article 33 of the Euratom Treaty, Official Journal L-238 of 27.8.1991 page 31;

2. Basic Safety Standards

Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation, Official Journal L-159 of 29 June 1996, page 1, repealing and replacing Council Directive 80/836/Euratom of 15 July 1980, OJ L-246 of 17 September 1980, page 1, and Council Directive 84/467/Euratom of 3 September 1984, OJ L-265 of 5.10.1984 page 4

Communication 98/C133/03 from the Commission concerning the implementation of Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation, - Official Journal C-133 of 30.4.1998 p. 3;

Communication 85/C347/03 from the Commission concerning the implementation of Council Directives 80/836/Euratom and 84/467/Euratom of 3 September 1984 amending Directive 80/836/Euratom, Official Journal C-347 of 31 December 1985 page 9;

3. Outside workers

Council Directive 90/641/Euratom of 4 December 1990 on the operational protection of outside workers exposed to the risk of ionizing radiation during their activities in controlled areas, Official Journal L-349 of 13.12.1990 page 21;

4. Information

Commission Communication 91/C103/03 on the implementation of Council Directive 89/618/Euratom, Official Journal C-103 of 19.4.1991 page 12;

Council Directive 89/618/Euratom of 27 November 1989 on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency, Official Journal L-357 of 7.12.1989 page 31;

Council Decision 87/600/Euratom of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency, Official Journal L-371 of 30.12.1987 page 76;

5. Contamination of foodstuffs and feeding stuffs - Post-Chernobyl

Commission Regulation (EC) No 1635/2006 of 6 November 2006 laying down detailed rules for the application of Council Regulation (EEC) No 737/90 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power-station, Official Journal L-306 of 7.11.206 page 3;

Commission Recommendation (EC) No 274/2003of 14 April 2003 on the protection and information of the public with regard to exposure resulting from the continued radioactive caesium contamination of certain wild food products as a consequence of the accident at the Chernobyl nuclear power station, Official Journal L-99 of 17.4.2003 page 55, amended by corrigendum published in Official Journal L-109 of 1.5.2003 page 27;

Commission Regulation No 1609/2000/EC of 24 July 2000 establishing a list of products excluded from the application of Council Regulation (EEC) No 737/90 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station, Official Journal L-185 of 25.7.2000, page 27;

Council Regulation No 616/2000 of 20 March 2000 amending Regulation (EEC) No 737/90 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station, Official Journal L-75 of 24.3.2000, page 1;

Council Regulation No. 737/90/EEC No 737/90 of 22 March 1990 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power-station. Official Journal L-82 of 30.3.1990, page 1;

6. Future accidents

Commission Regulation No 770/90/Euratom of 29 March 1990 laying down maximum permitted levels of radioactive contamination of feeding stuffs following a nuclear accident or any other case of radiological emergency, Official Journal L-83 of 29/03/90 page 78;

Council Regulation No 2218/89/Euratom of 18 July 1989 amending Regulation 87/3954/Euratom laying down maximum permitted levels of radioactive contamination of foodstuffs and of feeding stuffs following a nuclear accident or any other case of radiological emergency, Official Journal L-211 of 27.7.1989, page 1;

Council Regulation No 2219/89/EEC of 18 July 1989 on the special conditions for exporting foodstuffs and feeding stuffs following a nuclear accident or any other case of radiological emergency, Official Journal L-211 of 22.7.1989 page 4;

Commission Regulation No 944/89/Euratom of 12 April 1989 laying down maximum permitted levels of radioactive contamination in minor foodstuffs and of feedingstuffs following a nuclear accident or any other case of radiological emergency, Official Journal L-101 of 13.4.1989 page 17;

Council Regulation No 3954/87/Euratom of 22 December 1987 laying down maximum permitted levels of radioactive contamination of foodstuffs and of feeding stuffs following a nuclear accident or any other case of radiological emergency, Official Journal L-371 of 30.12.1987 page 11;

7. Shipments of radioactive waste and substances

Council Directive No. 2006/117/Euratom of 20 November 2006 on the supervision and control of shipments of radioactive waste and spent fuel, Official Journal L-337 of 5.12.2006 page 21;

Communication from the Commission of 19 April 1996 on illicit trafficking in nuclear materials and radioactive substances, COM(96) 171 final – not published in the Official Journal;

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