COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 20.12.2007
COM(2007) 847 final

COMMUNICATION FROM THE COMMISSION

Application of Article 35 of the Euratom Treaty

Verification of the operation and efficiency of facilities for continuous monitoring of the level of radioactivity in the air, water and soil

Report, 1990-2007

1. INTRODUCTION

1.1. Health and safety provisions in the EURATOM Treaty

Chapter 3, Health and Safety, of Title II of the Euratom Treaty is concerned on the one hand with the establishment of Basic Safety Standards for the protection of the health of workers and members of the public (Articles 30 – 33), on the other hand specifically with levels of radioactivity in the air, water and soil as laid down in Articles 35 – 38 (to some extent also Article 34, on "particularly dangerous experiments", i.e. weapons testing). There is an obvious link between the Basic Safety Standards and levels of radioactivity, the main purpose of controlling them being the protection of the health of members of the public.

The Basic Safety Standards have been updated since 1959 to take into account the development of scientific knowledge and operational experience. The latest revision was in 1996[1]. With regard to levels of radioactivity, in addition to the requirements of the standards, the main tasks of the Commission over five decades have concerned the application of Article 36 (collection and publication of data on levels of radioactivity to which the public is exposed as transmitted by Member States on the basis of measurement facilities established by them according to Article 35, first paragraph and Article 37 (Commission Opinions given on whether plans for the disposal of radioactive waste submitted by Member States are liable to affect other Member States).

The Article 37 procedure was very important at the time of rapid development of nuclear energy, with "general data" submissions for each new nuclear power reactor, reprocessing plant, or other nuclear installation. The rules and information content for general data submissions have been clarified in a series of Commission Recommendations, the latest adopted in 1999[2]. Reports on the implementation of Article 37 are transmitted to the Council and the European Parliament[3].

The implementation of Article 36 has focused on the publication of those data on levels of radioactivity which are relevant to the assessment of the radiation exposure of the population as a whole, so as to allow comparison of levels of radioactivity in different Member States. The demand for data quality and the method for reporting were laid down for the first time in a Commission Recommendation in 2000[4]. Since 2007, Member States can import and manage their own dataset in the Commission's database. This database, as well as the resulting annual Monitoring Reports and an electronic platform allowing the exchange of data from automatic radiation

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1 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 – OJ L159 of 29/06/96, p. 1

2 Commission Recommendation 99/829/EURATOM of 6 December 1999 on the application of Article 37 of the Euratom Treaty – OJ L324 of 16/12/99, p. 23

3 Report on the application of Article 37 of the Euratom Treaty, July 1994 to December 2003, COM (2005)85 final, 14.03.2005

4 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 – OJ L191 of 27/07/2000, p. 37

monitoring systems set up in the Member States, is managed in a successful co-operation between DG TREN and JRC-IES in accordance with Article 39 of the Euratom Treaty.

Article 35, second paragraph, confers a right of access to the Commission for the purpose of verification of the facilities for monitoring the levels of radioactivity. Until 1989, when the Commission approved an initiative to resume such verifications, they had been performed sporadically. Following the ruling of the Court of Justice of December 2002, stating that it is not appropriate to draw an artificial distinction between the protection of the health of the general public and the safety of sources of ionizing radiation, and the decision of the Commission to consider nuclear safety as a major priority, since 2003 it became obvious that Article 35 verifications would become a priority area from 2004 onwards. This Communication is the first report on the application of Article 35 and covers the period 1990-2007. Since 2004 these verifications have become systematic and priority has been given to the most sensitive installations.

Article 38 allows the Commission to make specific recommendations to Member States with regard to levels of radioactivity and, in case of urgency, issue directives and forthwith bring the matter before the Court of Justice in case of non-compliance. This Article confers in principle extensive powers on the Commission, but has never been applied except as the legal basis for a Commission Recommendation on radon in drinking water[5] and a Commission Recommendation on the continued radioactive caesium contamination of certain wild food products as a consequence of the Chernobyl accident[6].

The fact that Article 38 had never been applied reflects the effective compliance with the basic standards in the Member States concerned. Nevertheless, Article 38 offers an important lever to the Commission to give appropriate weight to the findings and observations made as a result of verifications carried out under Article 35, second paragraph.

1.2. Article 35 of the Euratom Treaty

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."

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5 Commission Recommendation 2001/928/EURATOM of 20 December 2001 on the protection of the public against exposure to radon in drinking water supplies – OJ L344 of 28/12/2001, p. 85

6 Commission Recommendation 2003/274/Euratom of 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 – OJ L99 17/04/2003, p. 55

Commission activities in application of Article 35 were sporadic up to the end of the 1980s. Following a review of its activities in the whole area of radiation protection, the Commission announced to the Council in 1986 – after the Chernobyl accident - its intention to exercise more systematically its right of verification under Article 35. The European Parliament adopted several resolutions with the same aim.

In December 1989 the Commission decided that the number of verifications should be increased.

2. VERIFICATION PROGRAMME

2.1. Verifications 1990 – 2003

Between 1990 and 2003 a total of 23 verifications were carried out. With few exceptions, the verification programme was established so as to provide an overview of the situation for a representative set of nuclear fuel cycle installations and for the facilities monitoring the levels of radioactivity in all Member States.

2.2. Verifications 2004-2007

From 2004 till now 25 verifications have been conducted. Since 2004/2005 priority has been given to the most sensitive installations and to the new Member States. By the end of 2006, verifications had been conducted in all Member States. Romania and Bulgaria are in the programme for 2007.

The Member States and respective nuclear sites visited in the framework of Article 35 are listed in the Annex, Table 1.

2.3. Main procedures for the verifications

Verifications were carried out along the lines of the protocols that had been agreed upon individually with all 15 Member States between 1990 and 1993. Since the publication of a Commission Communication[7] on 4 July 2006, this has become the basis for all verifications. The protocols and the Communication foresee the verification of both monitoring facilities in *sensu stricto* and the monitoring of discharges necessary for the assessment of their impact on the public exposed. The verifications may concern the area around a specific site and/or the national territory of the Member State as a whole or in part.

While under the terms of Article 35 the Commission is granted access to the facilities, for a factual verification of their operation and efficiency, the verifications actually start with an audit of the monitoring and inspection activities by the relevant national authorities and of the legal framework. The factual on-site verifications are representative of the overall arrangements and not necessarily exhaustive.

Verification Technical report

[7] Communication from the Commission: Verifications of the levels of radioactivity monitoring facilities under the terms of Article 35 of the EURATOM Treaty – Practical arrangements for the conduct of verification visits in Member States; OJ C155 of 04/07/2006, p. 2

– The technical report gives a comprehensive overview of the regulatory requirements, of the arrangements for monitoring levels of radioactivity and for the assessment of the impact of discharges. The production of this overview requires the synthesis of numerous documents towards a clear picture of the Member State's measures for implementing Article 35, first paragraph. The report also gives a detailed account of the verification activities carried out on-site and its surroundings, and of the observations to which these gave rise.

Verification Main Findings report

– The main findings of the verification are based on the observations and conclusions listed in the technical report, and pointing to areas where there is room for improvement.

– In all cases the verification missions were concluded by the official transmission of the main findings and the technical report.

For all verifications carried out since 1999 both the technical report and the main findings, as well as any official comments supplied by the Member State visited, are put on the EUROPA web-site:

ec.europa.eu / energy / nuclear / radioprotection / verification_en.htm

3. ADDED VALUE OF VERIFICATIONS

The experience gained so far has proven that the verifications yield a significant added value, both for the Commission and for Member States. For the Commission, they allowed in a number of cases sensitive issues to be assessed independently. The verifications also permitted a broad overview of the different national approaches and the way these are implemented and encouraged a common approach for improved monitoring.

For Member States, the Commission verifications allowed an independent validation of their approach and of their data, so as to provide reassurance both to their own population and to neighbouring Member States. For the competent authorities involved the visits were an opportunity to discuss their responsibilities in a broader perspective. For the utilities and laboratories visited, it was very often an opportunity to have their efforts spent in improving their performance acknowledged. Overall, the Commission verifications certainly enhanced the status of radioactivity monitoring programmes.

The Commission verifications became an opportunity for some new Member States to set up national programmes and to start the implementation of the corresponding systems for monitoring the levels of radioactivity on their territories.

The Commission verifications have been conducted with due respect to subsidiarity. No situations have occurred where they duplicated the task of national inspectorates. In quite a few cases the findings pointed to a need for a better separation of functions within the Member State and for the transparency of procedures. The observations of the verification team permitted the authorities to strengthen their own verification procedures.

Furthermore, the verifications are an important means to ensure the adequate implementation of the Commission Recommendation on the application of Article 36 of the Euratom Treaty and to discuss on a bilateral basis whether the networks established to monitor the levels of radioactivity are adequate (covering the national territory and providing representative data on actual levels of radioactivity).

3.1. Findings and Follow-up of past verification missions

In a number of cases observations related to a lack of overall quality assurance of the facilities and laboratories and to a need for strengthening the supervisory function of the competent authority had to be issued. It was often found that improvements needed to be made in record-keeping so as to facilitate both internal quality audits and verification by national or Community officials. Sampling programmes were not always regularly updated or the practical implementation of those programmes did not fully abide by the regulatory requirements.

Specific technical recommendations have been made on many occasions. In general, subsequent feedback from the national authorities confirmed that shortcomings had been rectified. Non-technical recommendations, e.g. management recommendations or recommendations to strengthen regulatory supervision, are less tangible and hence more difficult to follow up.

Verification visits were conducted specifically to satisfy the Commission that the recommendations that were made during a previous mission had been given due attention:

– A former reprocessing site visited in 1993 and 1999 was the subject of a follow-up visit in September 2004.

In 1999 a series of issues had focussed attention on this nuclear complex, culminating in a safety audit carried out by the national safety authorities. The verification activities addressed in detail those aspects of the audit report which had implications for the monitoring of radioactive effluents or with levels of radioactivity.

– A first visit in 2000 to a research reactor was also followed up in 2005.

On both occasions the follow-up verification activities indicated that the recommendations made had been implemented to satisfaction.

Only one verification mission (2002) led to broadly unsatisfactory verification findings bearing on fundamental legal shortcomings that had to be addressed. A Research Reactor was operated without regulatory authorisation or supervision, in contravention of the provisions of the Basic Safety Standards Directive. Hence an infringement procedure was initiated.

In November 2006 a follow-up verification mission was conducted. Although notable improvements had been achieved, a number of issues had still not been satisfactorily resolved of the time of the verification; the licensing procedure including discharge authorisations for both airborne and liquid effluent was completed however in August 2007.

4. PERSPECTIVES

4.1. Verification programme

A structured and credible verification scheme would:

– cover all major nuclear installations with an acceptable frequency;

– yield a representative overview of the situation with regard to other types of installations;

– allow the situation to be monitored with regard to non-nuclear industries discharging natural radioactivity and with regard to hospitals and research centres;

– allow a representative view to be obtained of the arrangements for radioactivity in regions remote from installations discharging radioactivity;

– audit the monitoring and inspection activities of the Member States on a regular basis.

Currently some five to seven verifications are conducted each year so that around one verification or audit is conducted in each Member State every five years. This allows a credible and representative verification programme to be established including the most representative installations. The frequency by which important installations can be visited should be increased. With current resources a maximum of around ten verifications could be planned for, in any single year. It is of course essential to maintain at least some flexibility so that arrangements can still be made to respond to ad-hoc requests or make use of the Commission's right of access in special circumstances.

4.2. Differences with safeguards activity

The Commission also has a right of inspection of nuclear installations under Title II, Chapter VII of the Euratom Treaty. These inspections are different from Article 35 verifications. They concern the safeguards of nuclear materials (Euratom Safeguards) and the specific requirements are spelled out in Commission Regulation (Euratom) 302/2005 of 8 February 2005.

Beyond the fact that the scope of the two types of verifications is different, a possible synergy is hindered by the fact that nuclear operators have direct responsibilities towards the Commission and safeguards inspectors have direct access to the nuclear material and to the installations. Under Article 35, second paragraph, of the Euratom Treaty the verifications pertain to how Member State authorities discharge their responsibilities under the first paragraph of the same Article. The Commission has no direct access to the installations or monitoring facilities.

4.3. Complementary means of strengthening implementation

The adoption of the Commission Recommendation on reporting on levels of radioactivity under Article 36 (2000/473/EURATOM) was a starting point for the

development of further guidance. A recommendation on the monitoring and reporting of discharges of nuclear installations was adopted on 18 December 2003[8]. Further developments of this type will facilitate the development of a clear methodology for the conduct of verifications and transparent criteria to judge compliance with the general requirement laid down in Article 35, first paragraph.

The Group of Experts established under Article 31 of the Euratom Treaty has adopted guidance on the implementation of Article 45 of the Basic Safety Standards, in view of the realistic assessment of population exposure. This will be the basis for judging the adequacy of monitoring programmes in the vicinity of nuclear installations in view of the assessment of doses to reference groups of the population. Such guidance will be incorporated in a Commission proposal for a new Basic Safety Standards Directive.

All these measures will considerably reinforce the efficiency and credibility of the verifications under Article 35.

5. CONCLUSION

The present Communication demonstrates the significant achievements of the verification activities undertaken, especially during recent years.

The Commission fully discharged its responsibilities under Article 35 of the Euratom Treaty, and thus ensured, in conjunction with the legislative requirements and the implementation of Articles 36-37 of the Euratom Treaty, that levels of radioactivity in the air, water and soil were adequately monitored and controlled.

[8] Commission Recommendation of 18 December 2003 on standardised information on radioactive airborne and liquid discharges from nuclear power reactors and reprocessing plants in normal operation - OJ L2 of 06/01/2004, p. 36

ANNEX

VERIFICATIONS IN TERMS OF ARTICLE 35 EURATOM TREATY

Verifications 1990 – 2007

The list of verifications carried out to date is given in Table 1. Figure 1 provides a histogram of the number of verifications carried out each year.

It should be noted that in view of the broader scope of the verifications the missions refer to a region in which levels of radioactivity are monitored which then include the major installations discharging into this region.

The verifications carried out so far were planned essentially with the objective of obtaining a representative view of the monitoring approach adopted in Member States. A few verifications were carried out in response to requests from other Member States or were triggered by concerns expressed about certain installations.

The distribution among Member States is the following: 6 in France (including Polynesia), 6 in the UK, 3 in Italy, 2 in Finland, Germany, Greece, Ireland, Luxembourg Spain and Portugal, 1 in Austria, Belgium, Denmark, Netherlands and Sweden, as well as 1 in each of the new Member States with the exception of Bulgaria (planned for autumn 2007).

The installations included in the verification activities are 3 reprocessing plants (and 2 adjacent waste disposal sites), 20 nuclear power plants (of which 3 were no longer in operation), 5 research institutes, 2 NORM (Naturally Occurring Radioactive Material) related installations, 1 uranium mine and 7 hospitals in 4 Member States. Several Member States were visited which have no nuclear installations on their territory, but which have an extensive monitoring programme, and in most Member States parts of the national monitoring systems of the levels of radioactivity on their territory were verified in the context of a site-specific visit.

In the case of one nuclear power plant, close to the border of another country, the verifications were extended to the relevant monitoring provisions on such territory.

The focus of the verification programme on nuclear installations does not imply that these are more important in terms of the impact of radioactive discharges. The verifications were carried out in industries processing naturally occurring radioactive materials (NORM) such as phosphate industries or coal mines. The departments of nuclear medicine of several hospitals were verified in 4 Member States. Special attention was brought to the discharge of radioactive materials, in particular the monitoring facilities and the monitoring approach taken by these hospitals.

Table 1: Overview of verification missions 1990 - June 2007

COUNTRY		INSTALLATION	DATE
1.	Germany	NPP Philipsburg	10 – 12.10.1990
2.	Luxembourg	National monitoring system of the levels of radioactivity	12.3.1991
3.	United Kingdom	Dounreay (site)	10 – 14.5.1993
4.	Netherlands	NPP Borssele Bilthoven (RIVM institute)	27 – 29.9.1993 30.9 – 1.10.1993
5.	United Kingdom	NFRP Sellafield Drigg repository	6 – 10.12.1993
6.	France	NPP Belleville-sur-Loire [9]	14 – 17.2.1994
7.	Denmark	RR Risø + laboratories	22 – 24.8.1994
8.	Spain	NPP Vandellos-2	7 – 10.11.1994
9.	Italy	NPP Caorso	22 – 24.3.1995
10.	France	French Polynesia (Mururoa)	1.9 – 6.10.1995
11.	Belgium	NPP Tihange	10 – 14.6.1996
12.	France	NFRP La Hague Centre de stockage de la Manche	22 – 26.7.1996
13.	Ireland	National monitoring system of the levels of radioactivity	10 – 13.9.1996
14.	Sweden	NPP Barsebäck	26 – 30.5.1997
15.	Finland	NPP Olkiluoto	31.8 – 4.9.1998
16.	United Kingdom	Dounreay (site)	15 – 18.3.1999
17.	Germany	NPP Krümmel	13 – 17.9.1999
18.	France / Belgium	NPP Chooz	22 – 26.11.1999
19.	Greece	RR Democritos (Athens); National monitoring system of the levels of radioactivity	23 – 25.5.2000
20.	United Kingdom	NPP Dungeness A+B	6 – 11.11.2000
21.	Austria	RR Seibersdorf Vienna; AKH (hospital)	25 – 29.6.2001
22.	Portugal	RR Sacavém (Lisbon); National monitoring system of the levels of radioactivity	14 – 17.5.2002
23.	France	NPP Belleville-sur-Loire	17 – 21.9.2003
24.	United Kingdom	NFRP Sellafield	8 – 12.3.2004
25.	Spain	NPP Trillo; National monitoring	27.6. – 2.7.2004

[9] Verification not concluded by an approved technical report

		system of the levels of radioactivity	
26.	United Kingdom	Dounreay (site); National monitoring system of the levels of radioactivity	28 – 30.9. 2004
27.	Hungary	NPP Paks; National monitoring system of the levels of radioactivity	8 – 12.11.2004
28.	Lithuania	NPP Ignalina; National monitoring system of the levels of radioactivity	21 – 25.2.2005
29.	Czech Republic	NPP Temelín; National monitoring system of the levels of radioactivity	14 – 18.3.2005[10]
30.	Slovakia	National monitoring system of the levels of radioactivity	10 – 15.4.2005
31.	Greece	RR Democritos (Athens); National monitoring system of the levels of radioactivity	12 – 16.9.2005
32.	Estonia	Sillamäe, Paldiski; National monitoring system of the levels of radioactivity	19 – 23.9.2005
33.	France	NFRP La Hague; National monitoring system of the levels of radioactivity	10 – 14.10.2005
34.	Latvia	RR Salaspils; Baldone radioactive Waste; National monitoring system of the levels of radioactivity	21 – 24.3.2006
35.	Malta	National monitoring system of the levels of radioactivity	25 – 27.4.2006
36.	Cyprus	National monitoring system of the levels of radioactivity; plant fertilisers (phosphor-gypsum) – NORM industry	8 – 12.5.2006
37.	Italy	NPP Caorso (decomm.); National monitoring system of the levels of radioactivity	15 – 19.5.2006
38.	Italy	NPP Latina (decomm.); National monitoring system of the levels of radioactivity	15 – 19.5.2006
39.	Slovenia	NPP Krško; National monitoring system of the levels of radioactivity	12 – 16.6.2006
40.	Poland	National monitoring system of the levels of radioactivity; Piast coal mine (NORM industry).	13 – 17. 11.2006
41.	Portugal	RR Sacavém – legal framework;	22 – 24.11.2006

[10] A first visit conducted on 9.6.2004 with a limited scope was incorporated in the comprehensive verification report

		National monitoring system of the levels of radioactivity. Uranium mine	
42.	Luxembourg	National monitoring system of the levels of radioactivity; Several hospitals (nuclear departments)	5 – 8.3.2007
43.	Finland	National monitoring system of the levels of radioactivity	20 – 23.3.2007
44.	Ireland	National monitoring system of levels of radioactivity ; hospital (nuclear department)	1 – 4.5.2007
45.	Romania	NPP Cernavoda; National monitoring system of levels of radioactivity	4 – 8.6.2007
46.	Germany	Former uranium mining area in Saxony	27 – 31.08.2007
47.	Spain	NPP Cofrentes; National monitoring system of levels of radioactivity	22 – 26.10.2007
48.	Bulgaria	NPP Kozloduj; National monitoring system of levels of radioactivity	26 – 30.11.2007

Figure 1: Overview of verification missions 1990- June 2007