minimum protection. That interpretation is corroborated by the fact that Article 7(1) of the Directive, read in conjunction with Article 1(c) thereof, provides for higher levels of protection for workers of the same age. It follows that, in the absence of an express provision to the contrary, the Directive must be interpreted as allowing the Member States to set, for apprentices and students aged between 16 and 18 years, stricter dose limits than those which it prescribes and to ensure for such people the higher level of protection which the Directive guarantees for workers of the same age.

REPORT FOR THE HEARING
in Case C-376/90 *

I — Legal background and preliminary procedure

A — *Community legislation*

1. Under Article 2(b) of the Treaty establishing the European Atomic Energy Community the Community must 'establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied'.

2. In this connection, Article 30 of the Treaty states:

'Basic standards shall be laid down within the Community for the protection of the health of workers and the general public against the dangers arising from ionizing radiations.

The expression "basic standards" means:

(a) maximum permissible doses compatible with adequate safety;

(b) maximum permissible levels of exposure and contamination;

(c) the fundamental principles governing the health surveillance of workers.'

3. The Council is required to determine the basic standards in accordance with the procedure laid down in Article 31 of the Treaty. The basic standards may be 'revised' or 'supplemented' in the circumstances provided for by Article 32.

* Language of the case: French.

4. As provided for by Article 218 of the Treaty, the first basic standards were determined in 1959. Since then, they have been revised and supplemented several times. The most recent codified version is contained in Council Directive 80/836/Euratom of 15 July 1980 amending the Directives laying down the basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation (OJ 1980 L 246, p. 1), as amended by Council Directive 84/467/Euratom of 3 September 1984 (OJ 1984 L 265, p. 4).

5. Article 1 of Directive 80/836 defines the terms used in it. It specifies that:

'*Ionizing radiation*' means 'radiation consisting of photons or of particles capable of producing ions directly or indirectly' (Article 1(a));

'*Dose limits*' mean 'the limits laid down in this Directive for the doses resulting from the exposure of exposed workers, apprentices and students, and members of the public, excluding the doses resulting from natural background radiation and exposure of individuals as a result of medical examination and treatment undergone by them. The dose limits apply to the sum of the doses received from external exposure during the period considered and the committed doses resulting from the intake of radionuclides during the same period.' (Article 1(b));

'*Source*' means 'an apparatus or substance capable of emitting ionizing radiation' (Article 1(c));

'*Exposed workers*' means 'persons subjected, as a result of their work, to an exposure liable to result in annual doses exceeding one-tenth of the annual dose limits laid down for workers.' (Article 1(c)).

6. Article 10(2) of the Directive lays down the dose limits for apprentices and students aged between 16 and 18 years. It is worded as follows:

'2. The dose limits for apprentices and students aged between 16 and 18 years who are training for employment involving exposure to ionizing radiation or who, in the course of their studies, are obliged to use sources, shall be equal to three-tenths of the annual dose limits for exposed workers laid down in Articles 8 and 9.'

7. Articles 8 and 9, as amended by Directive 84/467, are in the following terms:

'Article 8

Whole body exposure

1. The dose limit for whole body exposure of exposed workers shall be 50 mSv (5 rems) in a year.

2. For women of reproductive capacity, the dose to the abdomen shall not exceed 13 mSv (1.3 rems) in a quarter.

3. As soon as pregnancy is declared, measures shall be taken to ensure that exposure of the woman concerned in the context of her employment is such that the dose to the foetus, accumulated over the period of time between declaration of pregnancy and the date of delivery, remains as small as is reasonably practicable and in no case exceeds 10 mSv (1 rem). In general, this limitation can be achieved by employing the women in working conditions appropriate to category B workers.

Article 9

Partial body exposure

In the case of partial body exposure:

(a) the effective dose limit mainly used to estimate internal exposure in practice evaluated by the method set out in Annex II, Section E, shall be 50 mSv (5 rems) in a year; the average dose in each of the organs or tissues involved shall not exceed 500 mSv (50 rems) in a year:

(b) In addition:

"— the dose limit for the lens of the eye shall be 150 mSv (15 rems) in a year,";

— the dose limit for the skin shall be 500 mSv (50 rems) in a year. Where exposure is the result of radioactive contamination of the skin, this limit shall apply to the dose averaged over any area of 100 cm^2;

— the dose limit for the hands, forearms, feet and ankles shall be 500 mSv (50 rems) in a year.'

8. Article 44 of the Directive relates to health surveillance of the general public, in particular the assessment of the doses received by the general public. It is worded as follows

'1. The health surveillance of the population shall be based, in particular, on the assessment of the doses received by the population, both in normal circumstances and in the event of an accident.

2. Surveillance shall be carried out:

(a) on the whole population of the area concerned;

(b) on reference groups of the population in all places where such groups may occur.

3. Taking into account the radiological hazards, the dose determinations to be carried out for the protection of the population shall include:

(a) assessment of external exposure, indicating, where appropriate, the quality of the radiation in question;

(b) assessment of radioactive contamination, indicating the nature and the physical and chemical state of the radioactive contaminants and determination of their activity and their concentration;

(c) assessment of the doses that the reference groups of the population are liable to receive in normal or exceptional circumstances, and specification of the characteristics of these groups;

(d) assessment of the genetic dose and of the annual genetically significant dose, taking demographic characteristics into account. Doses due to exposure to various sources must be added together wherever possible;

(e) the frequency of assessments shall be such as to enable compliance with this Directive in each case;

(f) records relating to measurements of external exposure and radioactive contamination and the results of the assessment of the doses received by the population shall be kept in the archives and shall include accidental and emergency exposures.'

9. Finally, Article 45 of the Directive concerns national measures for surveillance and intervention. It provides the following:

'Article 45

1. Each Member State shall establish a system of inspection to supervise the protection of the health of the population, to interpret, in terms of the effects on health, the results of the assessments provided for in Article 44(3), and to check compliance with the dose limits laid down in Article 12.

2. Each Member State shall initiate action in regard to surveillance and intervention wherever necessary.

3. Each Member State shall take measures to ensure and effectively coordinate the health surveillance of the population, shall decide on the frequency of assessments and shall take all necessary steps to identify the reference groups of the population, taking into account the effective pathway of transmission of the radioactive material. These measures may, if necessary, be taken by one Member State jointly with other Member States.

4. In the event of accidents, each Member State shall stipulate:

(a) intervention levels, measures to be taken by the competent authorities and surveillance procedures with respect to the population groups that are liable to receive a dose in excess of the dose limits laid down in Article 12;

(b) the necessary resources both in personnel and in equipment to enable action to be taken to safeguard and maintain the health of the population. These measures may, if necessary, be taken by one Member State jointly with other Member States.

5. Any accident involving exposure of the population must be notified as a matter of urgency, when the circumstances so require, to neighbouring Member States and to the Commission.'

10. The period for transposition of the Directive into national legislation, as provided for by Article 46, expired in relation to Belgium on 3 December 1982. Under Article 2 of Directive 84/467, the period for its transposition into national legislation expired on 5 April 1986.

B — *National legislation*

11. By letters of 21 May and 10 August 1987, the Belgian Government informed the Commission of national measures for implementation of Directive 80/836.

12. With regard to Article 10(2) of the Directive, the Belgian Government referred to Article 20.6.2 of the Royal Decree of 28 February 1963 laying down general regulations for protection of the public and of workers against the dangers of ionizing radiation (Moniteur Belge No 98, p. 5206), as amended by Article 9 of the Royal Decree of 16 January 1987 (Moniteur Belge No 50, p. 3714), which provides the following:

'The dose limits for apprentices and students aged between 16 and 18 years who are training for employment involving exposure to ionizing radiation or who, in the course of their studies, are obliged to use sources, shall be equal to one-tenth of the dose limits laid down in Article 20.3 for persons exposed in the course of their employment.'

13. It is not disputed that the dose limits determined by Article 20.3 of the Royal Decree correctly transpose Articles 8 and 9 of Directive 80/836.

14. As regards *Articles 44 and 45 of the Directive*, the Belgian Government initially invoked several provisions of national legislation, which it considered complied generally with the requirements of those articles of the Directive. Before the Court, the Belgian Government did not deny its failure to fulfil its obligations stemming from the non-transposition of those articles.

C — *Preliminary procedure*

15. The Commission considered that Article 20.6.2 of the Royal Decree of 28 February 1963 does not comply with Article 10(2) of Directive 80/836 inasmuch as it provides for dose limits which depart quantitatively from those determined by the Directive and that the other provisions invoked by the Belgian Government do not entail complete transposition of Articles 44 and 45 of Directive 80/836. By letter of 31 December 1988 the Commission invited the Belgian Government to submit its observations in accordance with paragraph 1 of Article 141 of the EAEC Treaty, within two months of receipt of the letter.

16. By letter of 2 March 1989, the Belgian Government replied to the Commission's letter, maintaining principally that a Member State is within its rights in imposing stricter limits than those provided for by the Directive and that the dose limits determined by Article 20.6.2 of the 1963 Royal Decree are consistent with the limits provided for by Article 7(1) of the Directive for workers aged under 18 years.

17. On 20 November 1989, the Commission delivered a reasoned opinion calling on the Belgian Government to take the measures required to comply with the aforementioned articles of Directive 80/836 within two months of notification of the opinion.

18. By letter of 1 February 1990 and by a second undated letter, which the Commission received on 8 February 1989, the Belgian Government gave the Commission its reply on the transposition into domestic legislation of Article 10(2) and Articles 44 and 45 of the Directive. With regard in particular to the first of these provisions, the Belgian Government maintained that it was difficult to reconcile the aim of harmonization, as it was presented by the Commission, with the freedom of form and methods provided for by Article 161 of the EAEC Treaty and with the principles of justification and of optimization which, according to Article 6 of the Directive, must along with the dose limits form the new basis for the limitation of individual and collective doses.

19. The Commission was not satisfied with that reply and it therefore brought the present action for failure to fulfil obligations.

II — Written procedure and forms of order sought by the parties

20. The Commission's application was received at the Court Registry on 18 December 1990.

21. The written procedure followed the normal course. Upon hearing the report of the Judge-Rapporteur and the views of the Advocate General, the Court decided to open the oral procedure without any preparatory enquiry. It did, however, ask the Commission to provide certain documents.

22. The *Commission*, the applicant, claims that the Court should:

— declare that by not adopting the laws, regulations and administrative provisions needed to comply with Articles 10(2), 44 and 45 of Council Directive 80/836/Euratom of 15 July 1980 amending the Directives laying down the basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation, the Kingdom of Belgium has failed to fulfil its obligations under the Directive;

— order the Kingdom of Belgium to pay the costs.

23. The *Kingdom of Belgium*, the defendant, contends that the Court should:

— declare the Commission's action to be unfounded as regards the claim based on non-compliance with Article 10(2) of Directive 80/836.

III — Pleas in law and arguments of the parties

24. The *Commission* argues that the determination by a Member State of dose limits differing from those provided for by Article 10(2) of the Directive is contrary to the aim of Article 2(b) of the EAEC Treaty, which is to establish uniform safety standards.

25. The freedom as to form and methods enjoyed by Member States under Article 161 of the EAEC Treaty in relation to the transposition of a directive into national law does not justify derogation from precise quantitative amounts established in order to ensure uniformity of basic standards within the Community.

26. The principles of justification and optimization apply, under Article 6 of the Directive, within the context of dose limits; they do not amend them or render them stricter quantitatively.

27. The Commission also points out that the provisions mentioned by the Belgian Government do not implement Articles 44 and 45 of the Directive in national law.

28. The *Belgian Government* challenges the Commission's analysis relating to the dose limits provided for by Article 10(2) of the Directive.

29. It argues that Article 30 of the EAEC Treaty defines basic standards as maximum permissible doses and that under Article 6(c) of Directive 80/836, the maximum dose is the sum of doses received, which 'shall not exceed the dose limits laid down'.

30. The basic standard should therefore be a dose limit which must not be exceeded, whilst allowing for the determination of lower dose limits, and not a maximum dose which may be reached.

31. That interpretation is supported by the recommendations of the International Commission on Radiological Protection ('I. C. R. P.') formulated in 1977, which inspired Directives 80/836 and 84/467. The recommendations represent an advance in relation to previous recommendations, as the concept of maximum dose has been abandoned in favour of a comprehensive system of dose limitation based on three principles of equal rank: every activity resulting in an exposure to ionizing radiation must be justified (justification principle); if the activity is justified, the exposures must be kept as low as is reasonably achievable (optimization principle); finally, ceilings should be observed, that is to say, dose limits which may not be exceeded under any circumstances. These principles are explicitly adopted in Article 6 of Directive 80/836.

32. It follows from this that the competent national authorities must ensure that all

exposures are justified, even if they are below the prescribed ceilings.

33. Furthermore, the limitation of doses for apprentices and students to three-tenths of the annual dose limits for exposed workers (Article 10(2) of the Directive) is contrary to the rule on the limitation of doses for workers under 18 years of age, fixed at one-tenth of the annual dose limits (Article 7(1) in conjunction with the definition of 'exposed workers' given in Article 1(c) of the Directive).

34. To allow apprentices and students aged under 18 years greater exposure than workers of the same age cannot be justified. First of all, apprentices and students are subject to risks identical to those to which workers of the same age are subject, but have less social security protection than them. Secondly, this greater exposure is in no way necessary to their training.

35. The dose limit provided for by Belgian legislation for apprentices and students aged between 16 and 18 years is logical and perfectly in tune with the general principle of Article 7(1) of the Directive, which concerns all workers aged less than 18 years.

36. The Belgian Government states that an amendment to the Royal Decree of 28 February 1963 is being prepared in order to bring Belgian legislation into conformity with Article 44 of the Directive.

37. As regards the failure to fulfil obligations under Article 45 of the Directive, a draft Royal Decree laying down the legal basis for a national nuclear emergency plan was sent to the Commission on 11 December 1990.

38. In its *reply*, the Commission argues that the interpretation of the concept of maximum permissible doses put forward by the Belgian Government is contrary to the aim stated in Article 2(b) of the EAEC Treaty, the adoption of uniform safety standards. The concept of standardization is stricter than that of harmonization. Consequently, a Member State cannot set dose limits different from those provided for by Article 10(2) of the Directive, even if the national limits are stricter than those in the Directive.

39. The Belgian Government's argument based on the three principles of protection from ionizing radiation does not correctly reflect the relationship between those principles as devised by the I. C. R. P. In particular, the determination of a stricter dose limit for a particular activity in reliance on the justification of that activity, as the Belgian Government has done with respect to the activity of apprentices and students, reflects a confusion between the principle of justification and that of optimization. Those principles must be applied autonomously. The I. C. R. P.'s new recommendations for 1991 (Publication No 60) also support such autonomy.

40. Besides, the optimization principle for exposures applies essentially at the level of use of the radioactive source and, as was

highlighted in the Communication from the Commission concerning the implementation of Council Directive 80/836 (OJ 1985 C 347, p. 9), within the limits laid down in the legislation.

41. According to the Commission, the reason for not exposing workers aged under 18 to doses greater than one-tenth of the annual dose limit for workers is that the workers in question are at a stage of their physical development when they are very sensitive to the effects that ionizing radiation can have on their health. Clearly this reason applies equally to apprentices and students in the same age group. However, a higher dose limit for them is necessary in order to ensure that their training and studies are effective and useful. The setting of a lower dose limit would have the effect of interrupting the training of those concerned if the limit were exceeded. In that case, the radiological protection system would be counterproductive from an economic point of view and in particular from the point of view of training of engineers, *inter alia*, in the nuclear sphere.

42. Article 10(2) of the Directive should thus be regarded as a *lex specialis* or an exception in relation to Article 7(1).

43. The Commission points out that all the dose limits set in Directive 80/836 take into account an adequate safety margin for the persons concerned, as required by Article 30 of the EAEC Treaty. Consequently, it is not necessary for Member States to set limits stricter than those laid down in the Directive.

44. The Commission states that the draft amendment to the Royal Decree of 28 February 1963, intended to bring Belgian legislation into conformity with Article 44 of the Directive, must be submitted to it under Article 33 of the EAEC Treaty.

45. It also points out that the national nuclear emergency plan required by Article 45 of the Directive was not enclosed with the draft Royal Decree laying down the legal basis for such a plan which was submitted to it by the Belgian Government.

46. In its *rejoinder*, the Belgian Government maintains that the uniformity of safety standards which the EAEC Treaty seeks to achieve consists in uniformity of the rules underlying measures for radiological protection. Such uniformity would result from the application of the three principles stated in the I. C. R. P.'s 1977 recommendations.

47. It has been clear since the 1977 recommendations that the setting of a figure for exposures to ionizing radiation represents a maximum dose not to be exceeded in any circumstances and not, as the Commission implies, a 'permissible dose', as that idea was explicitly excluded from those recommendations.

48. It follows from this that the dose limits for apprentices and students, as provided for by Article 10(2) of Directive 80/836, are maximum doses and not permissible doses. Accordingly, the Belgian Government did not act arbitrarily in setting a dose limit stricter than that in the Directive.

49. Moreover, the determination of that limit by the Belgian legislation in no way reflects a confusion between the principle of justification and the principle of optimization. The Belgian Government argues in that respect that it was the optimization principle which led it to determine the limit in question. Even if that principle does not impose an 'obligation', it does give a State the right to set a dose limit stricter than the maximum dose. As for the principle of justification, it should also be applied not in order to determine a dose limit but to govern various types of instruction which involve the use of techniques exposing the students to doses of some level; those types of instruction may be treated in the same way as the various types of activity involving exposure to ionizing radiation.

50. Finally, according to the Belgian Government it is perfectly possible to organize training for apprentices and students under 18 years of age and to determine a dose limit equal to that set for workers of the same age. There are techniques such as simulation which allow the teaching objectives to be attained whilst avoiding exposure to ionizing radiation. The example given by the Commission in its reply, the training of engineers, is in no way persuasive, as that training only begins at age 18.

C. N. Kakouris
Judge-Rapporteur