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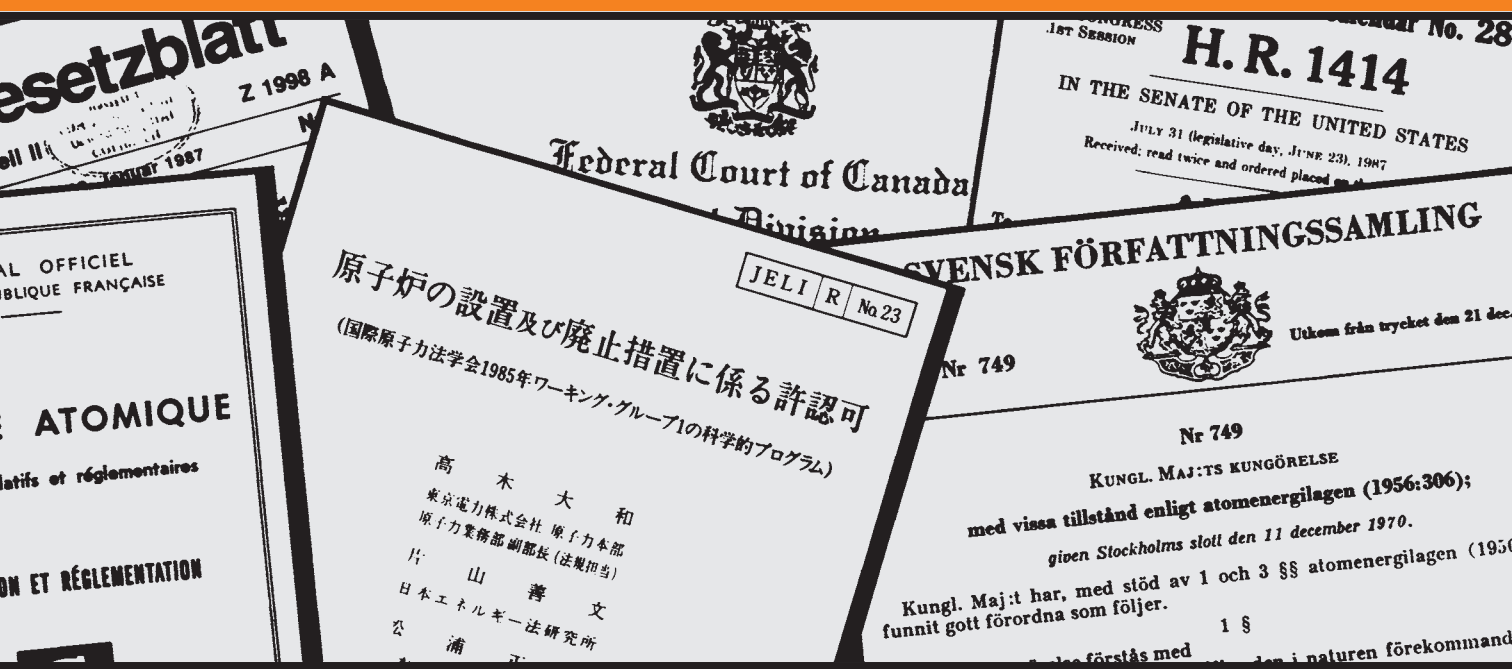

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The original Member countries of the OECD are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries became Members subsequently through accession at the dates indicated hereafter: Japan (28th April 1964), Finland (28th January 1969), Australia (7th June 1971), New Zealand (29th May 1973), Mexico (18th May 1994), the Czech Republic (21st December 1995), Hungary (7th May 1996), Poland (22nd November 1996), Korea (12th December 1996) and the Slovak Republic (14 December 2000). The Commission of the European Communities takes part in the work of the OECD (Article 13 of the OECD Convention).

NUCLEAR ENERGY AGENCY

The OECD Nuclear Energy Agency (NEA) was established on 1st February 1958 under the name of the OEEC European Nuclear Energy Agency. It received its present designation on 20th April 1972, when Japan became its first non-European full Member. NEA membership today consists of 27 OECD Member countries: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, Norway, Portugal, Republic of Korea, Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The Commission of the European Communities also takes part in the work of the Agency.

The mission of the NEA is:

- to assist its Member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for a safe, environmentally friendly and economical use of nuclear energy for peaceful purposes, as well as
- to provide authoritative assessments and to forge common understandings on key issues, as input to government decisions on nuclear energy policy and to broader OECD policy analyses in areas such as energy and sustainable development.

Specific areas of competence of the NEA include safety and regulation of nuclear activities, radioactive waste management, radiological protection, nuclear science, economic and technical analyses of the nuclear fuel cycle, nuclear law and liability, and public information. The NEA Data Bank provides nuclear data and computer program services for participating countries.

In these and related tasks, the NEA works in close collaboration with the International Atomic Energy Agency in Vienna, with which it has a Co-operation Agreement, as well as with other international organisations in the nuclear field.

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Third Party Liability in the Field of Nuclear Law
An Irish Perspective

by Paul O'Higgins SC and Patrick McGrath BL*

A. Introduction

Ireland is not a signatory to the Paris Convention on Third Party Liability in the Field of Nuclear Energy (hereinafter referred to as "the Paris Convention"),[1] which was adopted on 29 July 1960 under the auspices of the European Nuclear Energy Agency (which later became the Nuclear Energy Agency – NEA) of the Organisation for European Economic Co-operation (now the Organisation for Economic Co-operation and Development – OECD). Neither is Ireland a signatory to the Vienna Convention on Civil Liability for Nuclear Damage (hereinafter referred to as "the Vienna Convention") which was adopted on 21 May 1963 under the auspices of the International Atomic Energy Agency (IAEA). Ireland is, however, a member of both the NEA and the IAEA and, acutely conscious of the harm that might result to its citizens in the event of a major nuclear incident, maintains contact with both agencies by, *inter alia*, regularly attending the meetings of their governing bodies and various committees. Ireland therefore closely monitors developments in relation to both Conventions. Ireland has, to date, chosen not to ratify either Convention but this policy is kept under regular review particularly in the light of ongoing amendments to the Conventions.

The Paris Convention and the Convention of 31 January 1963 Supplementary to the Paris Convention (hereinafter referred to as "the Brussels Convention"),[2] which introduced a complementary system of indemnification of particularly costly nuclear damage from public funds, are currently being revised and the Amending Protocols are expected to be adopted over the coming months.

Ireland is, however, a Party to the Brussels Convention of 27 September 1968 on Jurisdiction and the Enforcement of Judgements in Civil and Commercial Matters (hereinafter referred to as the "BCJEJ"; see, on this subject, the article by P. Sands and P. Galizzi in *Nuclear Law Bulletin* No. 64)

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* Paul O'Higgins SC and Patrick McGrath BL are barristers practising at the Irish Bar. The facts contained and ideas expressed in this article are the responsibility of the authors alone.

1. Please note that references to "the Paris Convention" in this article refer to the 1960 Paris Convention as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982.

2. Please note that references to "the Brussels Convention" in this article refer to the 1963 Brussels Convention as amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982.

and is, along with the other member states of the European Union,[3] bound by Council Regulation (EC) No. 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgements in civil and commercial matters since its entry into force on 1 March 2002. This Council Regulation does not affect the substantive law to be applied to any claim under its aegis but rather is concerned with unifying the rules of conflict of jurisdiction in civil and commercial matters and simplifying the formalities in order to ensure the simple and rapid recognition of judgements in member states bound by the Regulation. It does not, however, alter the basic jurisdictional rules established under the BCJEJ.

A simulated nuclear incident was held on 22 and 23 May 2001 at the Gravelines nuclear power plant near Dunkirk in France as part of the INEX 2000 Exercise. The INEX (International Nuclear Emergency Exercise) Programme, carried out by the NEA since 1993, responds to member states' concerns to promote means of ensuring effective co-ordination between the various bodies which have a role to play in the event of a nuclear accident, in order to ensure rapid and efficient management of such a situation. This programme is composed of a series of exercises simulating nuclear accidents in which interested countries may participate. For the first time, it was decided to organise a third party liability workshop as an integral part of this exercise. Ireland was invited to take part in this Workshop on the Indemnification of Damage in the Event of a Nuclear Accident which took place on 26-28 November 2001 in Paris and the original version of this paper was prepared in order to present the views of the Irish delegation on that occasion.

This paper will first set out in summary form the main provisions of the Paris Convention, the instrument under which issues of third party liability between the majority of NEA member states affected by any such incident would be resolved, and will then set out some of the perceived advantages and disadvantages which would result from an application of the provisions of the Convention to a non-nuclear state such as Ireland.

This paper will then consider how Irish victims of a nuclear incident might recover compensation for loss and damage caused by such an incident. For reasons set out below, it is the view of the authors that Irish victims of such an incident could first bring their claim in Ireland or in France, that it is likely that Irish law would apply to any such claim and that any judgement, including any interlocutory judgement in such proceedings, could be enforced in the courts of any other European Union state, including France.

B. Brief Summary of the Paris and Brussels Conventions

Where, as in the simulated Gravelines incident, a nuclear accident has occurred in a country (France) which is a Party to the Paris Convention and damage has been caused in a country which is also a Party to that Convention (for example, Belgium), then the provisions of the Convention will apply. The courts of these states will apply the Paris Convention as enacted into their own legal system. Substantive and procedural matters not directly governed by the Convention will, per Article 14 of the Paris Convention, be determined by national legislation.

Individuals who suffer damage in a non-contracting state, for example Ireland, can bring actions under the ordinary third party liability laws where the injury is caused, as in this example, by the activities of a nuclear operator in France, a State Party to that Convention. Article 2 of the Paris Convention provides that the Convention does not apply "to nuclear incidents occurring in the territory of non-contracting states or to damage suffered in such territory, unless otherwise provided by the

3. Except Denmark which remains bound by the BCJEJ.

legislation of the Contracting Party in whose territory the nuclear installation of the operator liable is situated".

Territory includes the territorial sea of a State Party and it has also been recognised that the Paris Convention is applicable to incidents occurring and damage suffered on the high seas,[4] provided that the liable operator is subject to the Convention regime. It is clear from Article 2 that Contracting States may extend the territorial scope of the Convention by domestic legislation. In common with most Contracting Parties, France has not so extended the scope of the Convention. It should also be noted that the United Kingdom has also not extended the territorial scope of the Convention.[5]

Article 13 establishes a principle of exclusive jurisdiction, i.e. only the courts of the Contracting Party where the incident occurred will have jurisdiction over actions brought for damage caused by a nuclear accident which occurred in its territory. This of course only applies to actions brought under the Paris Convention and within its territorial scope.

Article 6(a) channels liability for claims caused by a nuclear incident onto the operator of the nuclear installation at which the incident occurred. The operator is only liable under the rules of the Convention and no other person will be liable for nuclear damage caused.

Article 3(a) provides that the operator is liable for "(i) damage to or loss of life of any person; and (ii) damage to or loss of any property […] upon proof that such damage or loss […] was caused by a nuclear incident […]". Whilst "nuclear incident" is widely defined in Article 1(a), the Convention does not address questions of proof of, for example, causation and damage and these are therefore "substantial or procedural" matters to be dealt with by national legislation [see Article 14(b)]. Article 14(c) provides that any such legislation "shall be applied without any discrimination based upon nationality, domicile, or residence".

Article 8 sets time limits on the bringing of actions for compensation, namely ten years from the date of the nuclear incident. Article 8(c) further provides that national legislation may establish a limitation period of no less than two years from the date on which the person suffering damage had knowledge of or ought reasonably have known of both the damage and the operator liable. This period cannot however exceed the maximum ten-year limitation period under Article 8(a).

Article 7 of the Paris Convention sets the maximum amount of liability of the operator at 15 million Special Drawing Rights (SDR),[6] although the parties may by legislation establish a lesser or greater amount of compensation, subject to an overall minimum of SDR 5 million. Article 10 requires the operator to have and maintain insurance or other financial security in order to guarantee that compensation will be paid. It should be noted that the Brussels Convention provides for additional

4. Recommendation of the Steering Committee of the NEA of 25 April 1968 [NE/M(68)1].

5. Section 13(1)(b) of the United Kingdom Nuclear Installations Act, 1965 (as amended) provides that compensation is not payable under that Act for breaches of duties imposed by Sections 7-10 thereof if the injury or damage "was incurred within the territorial limits of a country which is not a relevant territory" and a relevant territory is defined as being a country which is *inter alia* bound by an international agreement with the United Kingdom in relation to third party liability. The text of this legislation as amended in 1983 is reproduced in the Supplement to *Nuclear Law Bulletin* No. 33.

6. The Special Drawing Right (SDR) is an artificial unit of account based upon several national currencies and used by the International Monetary Fund (IMF). On 13 November 2002, the value of 1 SDR corresponded to USD 1.33.

compensation from public funds in the event that compensation under the Paris Convention is insufficient.

The Paris and Brussels Conventions[7] together provide for a maximum level of SDR 300 million. The compensation is to be provided according to a three-tier structure: (i) compensation of at least SDR 5 million which each party is required to establish by law and which has to be provided from insurance or other financial guarantee; (ii) compensation of up to SDR 175 million to be provided from the public funds of the party in whose territory the installation is situated; and (iii) compensation of up to SDR 300 million from public funds jointly contributed by all parties to the Brussels Convention.

C. Examination of the French legislation implementing the Paris and Brussels Conventions which would apply to the Gravelines scenario

Act No. 68-943 of 30 October 1968 on Third Party Liability in the Field of Nuclear Energy, as amended by Act No. 90-488 of 16 June 1990[8]

The application of the principles of the Paris and Brussels Conventions, and the advantages and disadvantages of the same for Irish victims of a nuclear incident, are to be seen in this French legislation.

Section 1 of the legislation provides that the Act lays down measures that, under these Conventions, are left to the initiative of each State Party.

The maximum liability of the operator of a nuclear installation, as set at 600 million French francs (FRF) (and FRF 150 million in the case of an installation which has been determined by decree as presenting a lower risk), is in excess of the requirements of the Conventions. Beyond this amount, the State assumes responsibility for an amount of up to FRF 1 500 million per accident, and finally all States Party to the Brussels Convention provide a further tier of compensation up to FRF 2 500 million.

Section 7 requires the operator to maintain insurance or financial security and Section 8 provides that, where victims cannot recover from the operator, guarantor or insurer, compensation shall in the last instance be met up to the maximum provided in the Act by the State.

Section 10 makes provision for the establishment by decree of a non-restrictive list of bodily injuries that shall be presumed to have been caused by the incident.

Section 13 deals with a situation where it is likely "at the time of a nuclear incident" that the maximum sums available for compensation are insufficient to compensate victims. A ministerial decree is required to be published within six months of the incident in order to set out how compensation is distributed. The decree will, having regard to, *inter alia,* the order of priority set out in Section 13(a) and (b) of the Act, set out rules for calculating the compensation available to victims for bodily injury and damage to property.

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7. The 1982 Additional Protocol to the Brussels Convention increased the amount of compensation available. The parties to the Brussels Convention must be parties to the Paris Convention.

8. The text of this Act was reproduced in the Supplement to *Nuclear Law Bulletin* No. 46.

Section 15 deals with limitation periods and provides for a maximum limitation period of up to 15 years[9] from the date of the incident. Section 16 would appear to provide that the usual rules in relation to the taking of proceedings apply to proceedings under the Act. Section 17 however provides that all actions are to be taken in the *Tribunal de Grande Instance* in Paris and Section 19 provides that the Act overrides any special rules concerning the prescription of actions against the state and local bodies.

Commentary

The above legislation makes real many of the difficulties and uncertainties that would face an Irish victim of a nuclear incident, remaining within the context of the present example at Gravelines, in seeking compensation under the Paris Convention. The usual rules of procedure and substantive law of France would seem to largely apply to the claim. In addition, there is a lack of clarity in relation to the distribution of compensation in the event that the maximum sums available are insufficient.

The legislation does not answer a number of pertinent practical questions raised in the *Vade Mecum* which was distributed in advance of the Workshop on the Indemnification of Damage in the Event of a Nuclear Accident. It is unclear how or if French law and procedure provide for:

- the establishment of an inventory of victims and of damage suffered as a result of an incident;
- the heads of damage subject to compensation according to the applicable definition of nuclear damage;
- distribution of emergency or interim payments;
- an "initial estimate" of the damage suffered in France or any other Contracting State;
- the issue of a decree under Article 13 of the French Act;
- the institution of class actions;
- the institution and processing of claims by victims resident abroad.

It would also be of interest to ascertain whether there is in existence any procedure for the provision of information by the French authorities to other NEA member states in relation to the manner in which claims for compensation may be made, the places where the necessary papers may be obtained and lodged, the provision and availability of legal advice and assistance, the deadlines for submissions of claims etc.

D. A Comparative Summary of the United Kingdom legislation implementing the Paris and Brussels Conventions

The liability of the United Kingdom Atomic Energy Authority or other licensed bodies pursuant to the Paris Convention is to be found in the Nuclear Installations Act, 1965 as amended (hereinafter

9. The State shall honour claims submitted after the expiry of the standard ten-year limitation period for a further period of five years.

referred to as "the 1965 Act").[10] The 1965 Act prohibits the use of a site for the purpose of installing or operating a nuclear installation such as a nuclear reactor or plant, and other ancillary matters, without the issuing of a licence by the Authority or a Government Department.[11] Sections 7, 8 and 9 impose strict liability on the licensee, the Authority and the Crown in respect of certain occurrences in connection with the use of nuclear sites.

Strict liability is imposed where injury to a person or damage to property arises from radiation or from a combination of radiation and the toxic, explosive or other hazardous properties of nuclear matter. The damage must, however, be physical and not purely economic loss and must relate to tangible property or property rights – *Merlin v. British Nuclear Fuels Limited* [1990] 2 QB 557. Where damage not covered by the Act occurs it would appear that under English law liability falls to be dealt with under common law rules.[12] Losses arising out of long-term risks and as yet unascertained physical harm are not covered.

As has been observed by a number of academic commentators,[13] there still remains, even where strict liability is imposed on the licensee or other body, the problem of causation. The 1965 Act requires that a causal link be established between the injury or damage suffered and the nuclear occurrence. It should be easy to establish a causal link between a major nuclear accident and persons who suffered physical symptoms such as radiation sickness shortly thereafter. It may however be impossible to establish this causal link where a plaintiff alleges that emissions from a nuclear plant have caused him or her to develop cancer over a period of years.[14]

The maximum period for bringing an action under the 1965 Act is 30 years from the occurrence giving rise to the claim or, where the occurrence is a continuing one or one of a succession all attributable to a particular happening on site, 30 years from the last relevant date. Under Section 16(1) of the 1965 Act, liability to pay compensation is limited to 140 million pounds sterling (GBP) in respect of any one single occurrence or to GBP 10 million for licensees of certain small installations, prescribed by reference to type and thermal output or radioactivity. Pursuant to Section 19 of the 1965 Act, licensees must make ministerially approved arrangements to make funds available to satisfy claims up to the amounts required by Section 16.

Section 18, as amended, imposes an obligation on the State to make available such sums as, when aggregated with contributions for other States Party to the Brussels Convention, amount to the equivalent in sterling to SDR 300 million.

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10. Ibid. Footnote 5.

11. Sections 1-6 of the 1965 Act.

12. See Hughes, Jewell, Lowther, Papworth & De Prez, *Environmental Law*, 4th Edition, pp. 144 and 145.

13. E.g. Christopher Miller, (1989) "Radiological Risk and Civil Liability", *Journal of Environmental Law*, Volume 10, No. 1.

14. This problem was illustrated in two cases brought by relatives of former workers in Sellafield – *Reay v. British Nuclear Fuels* [1992] 4 LMELR 195 and *Hope v. British Nuclear Fuels* [1993] 5 ELM 178. In both cases, the plaintiffs had not been able to establish the necessary causal link between radiation emitted from the plant and the injury allegedly caused to the relatives of former workers as a result.

E. Adoption of the Paris and Brussels Conventions – Advantages and Limitations for Irish Citizens

Possible advantages for Irish victims if Ireland were to ratify the Paris and Brussels Conventions

The Paris Convention provides a unified system of liability and recovery of compensation for nuclear damage covered by the Convention throughout Contracting States.

There is a guaranteed minimum sum of money available for the payment of compensation for damage caused as a result of a nuclear incident.[15] The net effect of the application of the Paris and Brussels Conventions is that there is now a total aggregate minimum sum of SDR 300 million available in respect of a nuclear incident.

Article 10 of the Paris Convention requires the operator to have insurance or other financial security, as specified therein, in order to ensure that any compensation for which it is liable will be paid.

The injured party is only required to prove causation and damage, and does not have to prove negligence or some other civil wrong or tort on the part of the operator as a condition precedent to recovery of damages. This is made clear in Article 3 of the Paris Convention. From an Irish point of view, this is one of the few attractive aspects of the system of third party liability as currently established under the Paris Convention. The victim of a nuclear accident would under Irish law currently have to show that any loss or damage was not only caused by the nuclear operator (or other defendant) but also that this had resulted from the commission of a civil wrong. The operator is liable for loss and damage, as defined in Article 3(a) of the Convention, upon proof that the same was caused by a "nuclear incident in such installation or involving nuclear substances coming from such installation, except as otherwise provided for in Article 4". A "nuclear incident" is widely defined in Article 1 and would cover incidents such as that simulated at Gravelines.

A decision of a court, competent under the Paris Convention to deal with the claim in question, will be enforceable in the territory of another Contracting Party once it becomes enforceable in the state of the competent court under Article 13(d) of the Paris Convention. This applies equally to interim judgements. The courts of the enforcing state cannot consider the merits of the judgement handed down in the state which decided the claim. Article 13(e) also provides that states against which an action is brought cannot, except in the case of measures of execution, invoke jurisdictional immunities before the court competent to hear the case.

Possible disadvantages for Irish victims if Ireland were to ratify the Paris and Brussels Conventions

There is a clear perception among non-nuclear states that the Paris and Brussels Conventions are balanced in favour of the nuclear industry. Of particular concern to Ireland in this regard would be the requirement that actions be taken in the courts of the state where the offending installation is located, the exclusive channelling of liability onto the operator, the relatively low limits of compensation available under the Paris Convention in the event of a major nuclear accident (even where complemented by the Brussels Convention), the narrow and uncertain definition of nuclear damage for which compensation is payable and the limitation period for bringing actions.

15. See Article 7 of the Paris and Brussels Conventions op. cit.

The cap on the total compensation available under the Paris and Brussels Conventions system for all the victims of a nuclear accident would appear to be insufficient to provide adequate compensation in the event of a serious nuclear accident. This remains the case despite the extra tiers of compensation from public funds and from the international fund provided under the Brussels Convention. The maximum required to be paid under the Conventions to all victims of a single nuclear incident is SDR 300 million (this is set at FRF 2 500 million under French law and GBP 140 million under UK law). It is very likely that such a sum of compensation would be inadequate to fully, or even substantially, compensate all victims of a major nuclear disaster.

The limitation periods for the institution of proceedings for loss and damage appear unduly restrictive. The ten-year limitation period provided for under Article 8 of the Paris Convention has been strongly criticised by many commentators[16] as many of the side effects of nuclear damage do not become apparent until after ten years.

The effect of Article 13 of the Paris Convention is that only the courts of the country where the incident occurs have jurisdiction over actions for damage caused by such an incident. Non-national victims would therefore have no right to seek compensation in the courts of their own states and would have to take action in an unfamiliar and distant legal system.

Liability is limited to the nuclear operator and therefore, for example, a builder of an installation, a provider of a nuclear power plant or equipment or a state/local authority responsible for supervision of the plant could not be sued. The operator is only liable under the rules of the Convention and no other person will be liable for nuclear damage caused.

Liability is further limited to (a) damage to or loss of life of any person and (b) damage to or loss of any property where the damage was caused by a nuclear incident at a nuclear installation (this paper does not consider the rules in relation to the transport of nuclear substances which are also dealt with in the Paris Convention). A number of issues arise in this regard as follows. No guidance is provided in the Paris Convention as to the concept of "nuclear damage". The general view of commentators is that general environmental damage is not recoverable and there is also uncertainty as to whether and to what extent economic loss would be recoverable under the Convention.[17] If, for example, there was an accident at the British Nuclear Fuel plant at Sellafield which resulted in contamination of the Irish environment, Ireland might well be subsequently perceived as an unsafe or potentially unhealthy destination by tourists. This could lead to substantial economic losses to the Irish economy and particularly to individuals who are employed in the tourism industry in Ireland. It is doubtful if losses of this kind are recoverable under the Paris Convention.

An additional difficulty is caused by the failure of the Paris and Brussels Conventions system to deal with the standard of proof in relation to both causation and damage. Although Article 3 of the Paris Convention effectively provides that the liability of the operator is absolute upon proof of causation, the Convention does not address the legal principles to be applied to ascertain causation and damage and/or the threshold of damage. Article 14(b) provides for a *renvoi* to national legislation in

16. B. Moser, (1986) "Proof of Damage from Ionising Radiation", *Nuclear Law Bulletin* No. 38, and P. Stahlberg, (1994) "Causation and the Problem of Evidence in Cases of Nuclear Damage", *Nuclear Law Bulletin* No. 53.

17. Paoli Galizzi and Philippe Sands, (1999) "The 1968 Brussels Convention and Liability for Nuclear Damage", *Nuclear Law Bulletin* No. 64. Study by the NEA Secretariat, (1987) "The Accident at Chernobyl – Economic Damage and its Compensation in Western Europe", *Nuclear Law Bulletin* No. 39. See also *Merlin v. British Nuclear Fuels Limited* [1990] 2 QB 557 op cit.

these circumstances but this of course involves the risk of the Convention being applied differently in different Contracting States.

In the event that the sums available for compensation are not sufficient to cover all losses sustained as a result of a nuclear incident, the apportionment of the amount available is also left to national legislation. This again runs the risk of the Convention being applied differently in each Contracting State.

F. Ireland's Present Reliance on the Brussels Convention on Jurisdiction and the Enforcement of Judgements and on Common Law

The BCJEJ and Council Regulation (EC) No. 44/2001 on Jurisdiction and the Enforcement of Judgements

As already noted, the Paris Convention only applies to claims for compensation where the incident and damage occur in states which are parties thereto. There is provision for Contracting States to extend the application of the Convention outside its jurisdiction but this has not been done in French law or indeed in the United Kingdom legislation.

Irish victims of a Gravelines-type incident might therefore seek to rely upon the terms of the 1968 Brussels Convention on Jurisdiction and the Enforcement of Judgements in Civil and Commercial Matters (BCJEJ) and/or Council Regulation (EC) No. 44/2001 for the enforcement of any judgement they might obtain in Ireland for damage resulting from a nuclear incident or the operation of a nuclear installation in another BCJEC/EC Regulation State. The Convention and Regulation provide an effective system for the enforcement of judgements delivered in one State Party to the BCJEJ (e.g. Ireland) in any other State Party to the Convention (e.g. France). It is our contention that an Irish victim of a Gravelines incident could bring a claim for compensation in an Irish or a French court, that the substantive laws of Ireland would likely be applied to any such claim and that any judgement arising from such claim could be enforced, if necessary, under the BCJEJ/EC Regulation system.

It should also, however, be pointed out that in the case of *Shortt v. Ireland*, *the Attorney General and British Nuclear Fuels Limited* [1997] ILRM 161 (see *Nuclear Law Bulletin* No. 59), the plaintiffs chose to bring a claim for what was described by the Supreme Court as being a claim in the nature of a tort or *quia timet* action under the provisions of Order 11(1)(f) of the Irish Rules of the Superior Courts. In other words the plaintiffs did not seek to bring the case under the BCJEJ and obtained leave to serve out of the jurisdiction under the traditional non-Convention procedure.[18]

The application of the BCJEJ/EC Regulation to the claim

Both Ireland and France are Parties to the BCJEJ/EC Regulation and these instruments will therefore govern the international jurisdiction of the courts of their Contracting States in their field of application. It appears that the field of application of the BCJEJ/EC Regulation includes actions for compensation for transboundary nuclear damage.

18. This case is considered more closely later in this article.

A future defendant may, however, seek to argue that such claims for compensation are not "civil and commercial matters" governed by the BCJEJ/EC Regulation. The objection that may be raised here is that the BCJEJ/EC Regulation do not apply to cases involving public authorities or authorities regulated by public law. Most states exercise strong regulatory control in the field of nuclear energy and, furthermore, public authorities often operate nuclear installations. It may, therefore, be argued that the BCJEJ/EC Regulation do not apply to any cases which arise from the operation of nuclear installations by such "public" authorities.

Public law matters are of course excluded from the scope of the BCJEJ. Guidance in relation to this question has, however, been given by the European Court of Justice (ECJ), as the ultimate arbitrator of the meaning of the BCJEJ, in three leading cases: *LTU v. Eurocontrol* (1977) 2 ELR 61, *Netherlands v. Ruffer* (1980) ECR 3807 and *Sonntag v. Waidmann* (1993) ECR 1. The rationale of those cases appears to be that the BCJEJ is excluded when there is an action between a public authority and a private person and where the public authority is acting in the exercise of its public powers. In our view it is unlikely that the ECJ would accept that the operator of a nuclear power plant, even where the plant is owned by a state agency and licensed by a state authority, is engaged in the exercise of a public power. To so hold would lead to the absurd conclusion that actions against the operators of private nuclear power plants would be within the Convention whereas those against state-owned operators would not.

In general, the BCJEJ establishes jurisdiction based on the defendant's domicile when the defendant is domiciled in a Contracting State, following the traditional rule *actor sequitur forum rei*. An Irish victim of a Gravelines-type incident could however also avail himself or herself of the forum indicated by Article 5(3) of the BCJEJ. This provides that a person domiciled in one Contracting State may be sued in another Contracting State "in matters relating to tort, delict or quasi-delict, in the courts for the place where the harmful event occurred". There is little doubt that "tort, delict or quasi-delict" is sufficiently wide to cover an action for damage caused by a nuclear incident. The ECJ has given this phrase a community meaning as covering all actions which seek to establish the liability of the defendant and which are not related to a contract within the meaning of Article 5(1) of the BCJEJ.

The words "the courts for the place where the harmful event occurred", following decisions of the ECJ in several cases including the famous *Mines de Potasse d'Alsace* case [1976] ECR 1735, have, in relation to direct victims of a tort etc., been interpreted as conferring jurisdiction on the courts of the state where the event giving rise to the damage occurred as well as the state where the damage itself occurred, at the option of the plaintiff. The French and Irish courts would therefore, in the incident under consideration, and at the option of the plaintiff, have jurisdiction under Article 5(3) to hear any such claim.

Order 11(1) of the Irish Rules of the Superior Courts

In any event, even if the claim were to be one that was held not to be within the terms of the BCJEJ/EC Regulation, the decision of the Supreme Court in the *Shortt* case (op. cit.) is authority for the proposition that *prima facie* the Irish courts would have jurisdiction at common law to entertain any such claim. This decision concerned the propriety of allowing the plaintiffs, resident in Ireland, to seek various reliefs in the Irish courts including declarations, injunctive relief and damages for various torts alleged to have been committed by British Nuclear Fuels Limited in the operation of the Thorp reprocessing plant at Sellafield. The High and Supreme Courts both rejected the contention of British Nuclear Fuels Limited that this was not a proper case in which to allow the service of a summons out of the jurisdiction under Order 11 of the Irish Rules of the Superior Courts.

Judge Barrington, at page 169 of the judgement, made the point that it was not the activities as such that gave the plaintiff a cause of action but the results of the activities and it was these allegedly harmful events that gave the Irish courts jurisdiction. He then referred to the future possible course of the case and made the following observations:

> "*Prima facie* it is difficult to see how any provision of English law could make legal in Ireland injury or damage which would otherwise be tortious under Irish law. Certainly it is hard to see how any provision of UK law could deprive the Irish courts of jurisdiction which they would otherwise have. *Prima facie* the relevant law would appear to be the *lex loci delicti* rather than the law of the United Kingdom."

The law to be applied to any such claim

The ECJ confirmed in the case of *Shevill v. Presse Alliance SA* [1995] 2 AC 18 that the object of the BCJEJ was not to unify the substantive law and procedure of different Contracting States but only to determine which courts had jurisdiction and to facilitate the enforcement of judgements. Questions raised by an action for damages in tort or quasi-tort, such as "the circumstances in which the event giving rise to the harm may be considered harmful to the victim, or the evidence which the plaintiff must adduce" are to be settled "solely by the national court seised, applying the substantive law determined by its national conflict of laws rules, provided the effectiveness of the Convention is not thereby impaired".

It is of particular interest to first note that if an Irish plaintiff were to bring an action in the French courts for damage suffered as a result of an incident in Gravelines, then it would *prima facie* appear that the French courts would apply the *lex damni*, the law of the place of the damage, to any such claim.[19]

The *lex damni* would also be likely to be applied to cases brought in the United Kingdom. Section 11(1) of the Private International Law (Miscellaneous Provisions) Act, 1995 states the general rule that in tort the applicable law is that of the country where the events constituting the tort in question took place. Section 11(2) applies in the situation where elements of the events constituting the tort or delict in question occur in different countries. Section 11(2)(a) and (b) provide that the applicable law is "for an action dealing with bodily damage caused to a person or death resulting from the bodily damage, the law of the place where the person was when he suffered the damage" and "for an action dealing with property damage, the law of the place where the property was at the time of the damage". Section 11(2)(c) provides that in any other case, the applicable law is "the law of the country in which the most significant elements of those events occurred". Section 12 allows for the displacement of the general rule and the application of the law of another country where this appears to be "substantially more appropriate" for the reasons set out in that Section.

There are other rules applied in different legal systems to the question under discussion, e.g. Germany and Italy apply the principle of the law that is most favourable to the injured party whereas the Netherlands and Denmark apply the law of the place of the dangerous activity (*lex loci actus*).[20]

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19. See Christopher Bernasconi, (2000) "Civil Liability Resulting from Transfrontier Environmental Damage: A Case for the Hague Conference", *Hague Conference on Private International Law*, pp. 29-40.

20. An associated issue raised in the Bernasconi paper concerns the attitudes of national courts on the effect of an "administrative authorisation" abroad on a judicial claim involving transfrontier pollution. This

Were the plaintiff to take an action in Ireland, it is also likely that the law applied to any such claim would be the law of Ireland, the place where the injury or loss occurred. This question has not been regulated by statute in the state and common law principles therefore apply. There is little Irish authority directly on point but an analysis of case law would give grounds to argue that Irish law should be applied to any such case.

The traditional common law rule in relation to foreign torts is derived from *Philip v. Eyre* [1870] LR 6 QB 1 as modified by *Chaplin v. Boyes* [1971] AC 356. At common law there was a rule of double actionability which provided that for the plaintiff to succeed in recovering damages for a wrong committed abroad, he or she would have to show that the wrong in question (i) would, if done in Ireland, be an actionable wrong in Irish law and (ii) was not justifiable by the law of the place where the wrong was committed.

This rule was heavily criticised by Walsh J. in the Supreme Court decision in *Grehan v. Medical Incorporated and Valley Pines Associates* [1986] IR 528. In that case the plaintiff was claiming damages for personal injuries suffered as a result of the disintegration of a heart valve manufactured in the United States and which had been inserted in his heart in Ireland. Although the case only concerned the question of the jurisdiction of the Irish courts to hear the claim, the Supreme Court went on to remark that in the context of jurisdictional questions, the High Court should have regard to choice of law implications. The Court criticised *Philips v. Eyre* and suggested that a more flexible approach to the question of law should be applied in Ireland. At page 541 of the report Walsh J. stated that in his view, so far as choice of law in tort cases was concerned, "the Irish Courts should be sufficiently flexible to be capable of responding to the individual issues presented in each case and to the social and economic dimensions of applying any particular choice of law rule in the proceedings in question". In the later case of *An Bord Trachtala v. Waterford Foods Ltd*, High Court, 25 November 1992, Keane J. seemed, however, to prefer the traditional common law rule and stated that there was much to be said for leaving the matter of reform to the legislature.

Of particular interest are also the more recent observations of the Supreme Court in the case of *Shortt* (op cit) on the question of jurisdiction and choice of law.

Although the matter is not settled it would seem arguable that Irish law should apply to any claim of the type under consideration heard before the Irish courts on the basis of the obiter observations in *Shortt* and *Grehan*.

In the event that the traditional rule of double actionability, as seemingly preferred by Keane J. in *An Bord Tachtala v. Waterfood Foods*, were applied to such a claim it does not appear that this would necessarily put an insurmountable barrier in the way of the plaintiff. The plaintiff would have to show that the wrong was actionable in Ireland and also that the act was "not justifiable by the law of the place where it was done". There does not appear to be any general exclusion or limitation of liability under French law.[21] It also seems that where damage is not covered by the terms of the United Kingdom 1965 Nuclear Installations Act, liability falls to be determined under common law rules.

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question was alluded to in *Shortt*. In granting leave to serve outside the jurisdiction on British Nuclear Fuels Limited, the Irish Supreme Court said that it was *prima facie* hard to see how any provisions of UK law could make legal in Ireland injury or damage that would otherwise be tortious under Irish law. In relation to the Gravelines incident, it is pointed out in the Bernasconi paper that under French law, administrative authorisations expressly reserve the rights of third parties.

21. Bernasconi (op cit above), p. 42.

Summary of Irish Law in relation to such a claim

It is not the purpose of this paper to carry out a detailed analysis of the Irish law of torts but rather to refer to the likely causes of action available to an Irish plaintiff in the event of loss and damage caused by a nuclear incident.

Before summarising causes of action, however, we would first like to mention the questions of damages and limitation periods.

The general purpose of the Irish law of torts is to place a plaintiff in the same position as he or she would have been prior to the commission of the wrong. This is referred to as the principle of *Restitutio in Integrum*. The only form of compensation permitted by Irish law at present is a lump sum award. There is also no specific bar on the recovery of pure economic loss suffered as a result of tortious action. There is no limitation on the total amount that may be recovered by an individual or a group of individuals who suffer loss and damage.

The provisions of the Irish Statute of Limitations would also be more advantageous to a plaintiff as compared to the provisions of the Paris Convention. The general period of limitation for an action founded on tort is six years from the date on which the cause of action accrued – Section 11 of the Statute of Limitations 1957. Where a tort is actionable *per se*, time begins to run from the date of the act whereas where there is, for example, continuing trespass or nuisance, a fresh cause of action arises *de die in diem*. Where a tort is actionable only on proof of damage, as with negligence for example, time does not begin to run until some damage actually occurs. In addition, the Statute of Limitations (Amendment) Act, 1991 introduced a special limitation period for actions for personal injuries. Section 3(1) provides that such an action, where it is alleged the injuries were caused by negligence, nuisance or breach of duty, must be brought within three years of the cause of action accruing or the date of knowledge of the person injured (if later).

Rylands v. Fletcher

This is probably the most powerful weapon in an Irish plaintiff's armoury were he or she to sue for loss or damage caused by a nuclear incident. Under the famous House of Lords decision in *Rylands v. Fletcher* [1868] L.R. 3 H.L. 330, any person who, in the context of a non-natural use of his real property accumulates anything that may cause harm to his neighbour in case it flows out, is strictly liable for all the damage that is the direct consequence of the outflow. Subsequent decisions have found that whereas the domestic use of electricity or gas will not fall within the scope of the rule, non-domestic use of these substances or of explosives or other highly inflammable materials may give rise to strict liability. It is therefore likely that the production of nuclear energy and the escape of harmful outflows as a result would be actionable under the rule.

Private Nuisance

A plaintiff may also consider bringing an action in nuisance in the event of a nuclear incident. Private nuisance is not actionable *per se* and actual damage must be shown and the damage must consist of physical injury to land, a substantial interference with the use and enjoyment of land or an interference with servitudes. It is only a person with an interest in the land, or an occupier of the land, who can maintain such an action.

Negligence

To succeed in any such claim a plaintiff would have to establish four elements:

(i) a duty of care, that is that the nuclear operator (or the manufacturer of parts etc.) owed the plaintiff an obligation to conform to a standard of behaviour for the protection of others against unreasonable risks;

(ii) a failure to conform to the required standard;

(iii) actual loss or damage to recognised interests of the plaintiff;

(iv) a sufficiently close causal connection between the conduct and resulting injury to the plaintiff.

It is unlikely that the courts would have much difficulty in finding that a nuclear operator in France did owe a duty of care to an Irish resident. The standard of that duty will obviously be a matter of debate and whether, on the facts of the given case, the defendant operator fell below the requisite standard. Items (iii) and (iv) are really matters of proof in court.

Trespass to Land

A plaintiff in a Gravelines-type situation may also consider seeking damages for trespass to his or her land. It is a trespass for a person to place any chattel on the land of another or to cause any object or substance directly to cross the boundary of another's land. The injury caused must be direct. Although the tort is actionable *per se*, that is without proof of any injury, the plaintiff will normally have to prove appreciable loss to obtain significant damages.

Other issues under the BCJEJ

The applicant may also seek to have any interlocutory relief obtained in the state having jurisdiction over a claim enforced in any other Contracting State. In accordance with the BCJEJ/EC Regulation, a court which has jurisdiction as to the substance of a case also has jurisdiction to order any provisional or protective measures that may prove necessary.

We would again cite the case of *Shortt v. Ireland, the Attorney General and British Nuclear Fuels Ltd* and draw your attention to the fact that the plaintiffs therein are seeking *inter alia* injunctive relief and have been given leave to serve their proceedings out of the jurisdiction under Order 11 of the Superior Courts Rules. That case was not brought under the BCJEJ but does indicate the openness of the Irish courts to the possibility of claims being entertained in this jurisdiction for damage caused by the operation of a nuclear plant in an adjoining state.

Under the Paris Convention, liability is channelled onto the operator of the nuclear installation. There is no such limitation of potential defendants under the Irish law of torts. In the event of a Gravelines-type incident, an Irish plaintiff could seek compensation from, for example, the builder of the installation and the supplier of the power plant or material that proved to be faulty.

G. Conclusion

Although there are some attractions in the system of third party liability established by the Paris and Brussels Conventions, there is little doubt that these are outweighed for Ireland by the many disadvantages and limitations set out above. The most serious of these limitations are the clearly inadequate sum of compensation available in the event of even a moderate nuclear incident and the unduly inflexible and restrictive limitation periods imposed on a plaintiff. From an Irish point of view, these Conventions appear to put the interests of the nuclear industry before the interests of those who might be injured as a result of what is, after all, one of the most potentially dangerous activities carried out by mankind.

Given that Ireland is not, and has no intention to become, a nuclear power producer, it is difficult to see any compelling legal, social, political or economic reason to become a Party to the Paris and Brussels Convention systems as they now stand.

Ireland considers that at this present time, the interests of its citizens is, on balance, better protected by relying upon the substantive law of the state and the system of recognition and enforcement of judgements originally established by the 1968 Brussels Convention on Jurisdiction and the Enforcement of Judgements in Civil and Commercial Matters. This is, however, a matter that is kept under review and it may well be that future amendments may persuade Ireland to take a different view and become a party to the Paris and Brussels Conventions.

CASE LAW AND ADMINISTRATIVE DECISIONS

CASE LAW

Canada

Federal Court ruling quashing uranium mill and tailings licence (2002)

In a judgement of 23 September 2002 in the case *Inter-church Uranium Committee Educational Co-operative v. Atomic Energy Control Board of Canada and Cogema Resources Inc.* (unreported at date of writing), the Federal Court of Canada (Trial Division) quashed a licence issued by the former Atomic Energy Control Board (AECB) for the operation of a uranium mill and tailings management facility.

The proposal for the uranium facilities at McClean Lake in the Province of Saskatchewan had been the subject of an environmental panel review in the 1990s under a previous regime known as EARPGO (Environmental Assessment and Review Process Guidelines Order, SOR/84-467). The environmental assessment regime changed in 1995 with the coming into force of the Canadian Environmental Assessment Act (CEAA). The staged licensing process of the former AECB (now the Canadian Nuclear Safety Commission – CNSC) resulted in the issuance of various licences for the McClean Lake facilities commencing in 1994, including a construction licence. In 1999, the AECB issued a licence to permit the operation of the mill and tailings management facility. Given that an environmental review had taken place under the previous environmental review regime, the AECB did not require a new environmental assessment before issuing the licence to operate the facility. The AECB found that the intent of the CEAA had been met in that one of the objects of that Act is to avoid duplication in environmental assessment matters.

The Inter-church Uranium Committee Educational Co-operative sought judicial review of the AECB's decision to issue the operating licence on the grounds that a new environmental assessment should have been conducted under the CEAA. They successfully argued that the transitional provisions in the CEAA did not operate to negate the necessity of a new environmental assessment under that Act. The Court held that the AECB had erred in law in issuing the licence and therefore acted without jurisdiction. The decision is under appeal.

The text of this decision is available on the Web site of the Federal Court of Canada at http://decisions.fct-cf.gc.ca/fct/2002/2002fct994.html.

Germany

Ruling of the Supreme Court on the Phase-out Law (2002)

On 19 February 2002, the Federal Constitutional Court in Karlsruhe ruled that the national nuclear energy phase-out (see *Nuclear Law Bulletin* No. 66) is a matter for the federal government only to decide and the states (*Länder*) are not entitled to intervene.

In December 2001, one of the *Länder*, Hesse, sued the federal government before the Federal Constitutional Court, alleging unconstitutional interference in licensing of safety-related upgrades at the two Biblis PWRs. Hesse claimed that in negotiating the phase-out with Biblis owner RWE AG, the Federal Ministry of Environment and Nuclear Safety (*Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit* – BMU) and RWE violated Hesse's constitutional rights by deciding which safety-related backfits were necessary to justify continued operation of the two reactors. An annex to the final Phase-out Agreement concluded in June 2000[1] provided that BMU was responsible for deciding the issue of Biblis backfitting. Hesse claimed that the head of BMU and RWE management held meetings and negotiations on regulatory and safety issues at Biblis and made decisions that should have involved state regulators.

The Court rejected Hesse's claim, announcing in a statement released after the verdict that "at any time [BMU] can take upon itself the responsibility for making technical decisions" in reactor regulation, including in direct interactions with third parties such as reactor owners. The Court stated that "decision-making on the [phase-out] consensus policy is a separate matter from routine regulation".

ADMINISTRATIVE DECISIONS

Finland

Parliamentary decision on construction of a new nuclear power plant (2002)

On 17 January 2002, the Finnish Council of State (the Government) had issued a positive Decision in Principle on the application made by the utility *Teollisuuden Voima Oy* (TVO) to construct a new nuclear power plant unit (see *Nuclear Law Bulletin* No. 69). At that time, the Council of State also declared that the liability amount of nuclear operators should be raised significantly, and three ministers issued a statement according to which the 1987 Nuclear Energy Act (the text of this Act is reproduced in the Supplement to *Nuclear Law Bulletin* No. 41) should be amended to ensure that the nuclear operator has to bear liability for the costs of radioactive waste management for 50 years after the repository has been closed.

On 24 May 2002, by a vote of 107 votes in favour and 92 votes against (no abstentions), the Parliament ratified this Decision in Principle on the construction of the fifth nuclear power plant unit in Finland. The Decision in Principle remains in force for five years from the date of ratification by the

1. The text of this Agreement is available on the Web site of the Federal Ministry of Environment and Nuclear Safety at www.bmu.de/english/fset1024.htm

Parliament, within which time TVO is required to submit an application for a construction permit pursuant to the Nuclear Energy Act. Before submitting the permit application, the company must also choose between the two proposals for the plant site – Hästholmen in Loviisa and Olkiluoto in Eurajoki. It is expected that the plant could be commissioned at the end of the decade. Spent fuel from the new power plant unit is to be disposed of in the bedrock in Olkiluoto.

Switzerland

Public vote on the proposal for a final repository for short-lived low and medium-level radioactive waste (2002)

On 22 September 2002, the electorate of the Nidwalden Canton in central Switzerland rejected for the second time in seven years by public vote the proposal to grant a cantonal concession to the Wellenberg Co-operative Company for Radioactive Waste Management (*Genossenschaft für Nukleare Entsorgung Wellenberg* – GNW), which is responsible for carrying out all activities in relation to research on and construction of a final repository for short-lived low and medium-level radioactive waste. GNW had chosen the Wellenberg site in the Nidwalden Canton for this purpose (see *Nuclear Law Bulletin* Nos. 52 and 54). Pursuant to the 1959 Federal Act on the Peaceful Uses of Atomic Energy and Protection against Radiation (see *inter alia Nuclear Law Bulletin* Nos. 52-55), activities related to mining and the use of subsoil resources are subject to the legislative and regulatory requirements of each canton. Therefore, GNW required a cantonal concession in order to open an underground research laboratory (URL) to determine whether the rock type is appropriate for this method of disposal, even though such activities are part of a federal initiative to construct a national repository. The concession was granted by the cantonal authorities, but was rejected by 58% of the population when it was submitted to public vote. The Wellenberg site has been definitively rejected by GNW since the result of this vote.

Currently, the Swiss Parliament is examining a draft Law on Nuclear Energy, which would repeal and replace the 1959 Act, and the question of whether these cantonal prerogatives will be maintained or not is an eminently political one.

Pending the entry into operation of a final repository for disposal of short-lived low and medium-level radioactive waste, such waste will be placed in the Zwilag interim waste repository at Würenlingen, in the canton of Argovia. This repository is designed for the temporary storage of all categories of radioactive waste (see *Nuclear Law Bulletin* No. 52).

NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

Argentina

Organisation and Structure

Decree on the Structure of the National Atomic Energy Commission (2002)

Decree No. 1450/2002, which entered into force on 23 August 2002, modified the internal structure of the National Atomic Energy Commission (*Comisión Nacional de Energía Atómica* – CNEA). Pursuant to this Decree, the CNEA, a decentralised body under the authority of the General Secretary of the Presidency, is composed of six main directorates established according to geographical criteria (Bariloche Atomic Centre, Constituyentes Atomic Centre, Ezeiza Atomic Centre) and material criteria (Technology and the Environment, Development of Economic Resources and Administration and Finance) and whose objectives are set out in this Decree.

Regime of Nuclear Installations / Regime of Radioactive Materials

Resolution of the Nuclear Regulatory Authority on Penalties for Offences in Respect of Class II and III Installations, Non-routine Practices and the Transport of Radioactive Substances (2002)

Resolution No. 32/2002 of the Nuclear Regulatory Authority (*Autoridad Regulatoria Nuclear* – ARN), which entered into force in August 2002, replaces the regime governing penalties for breach of the radiological safety rules relating to the use of nuclear energy in the fields of medicine, agriculture, industry, research and education, established by Decree No. 255/1996 as amended in 1998.

This Resolution sets out a new regime governing financial penalties applicable to physical persons or legal entities for infringements of the safety rules that apply to Class II and III installations (i.e. nuclear energy used in the fields of medicine, agriculture, research, transport, industry and education), non-routine practices and transport of radioactive substances.

Pursuant to this Resolution, the ARN has wide powers to maintain radiological safety, including the seizure of radioactive substances, the preventive closure of nuclear installations and any other measure necessary to implement the National Law on Nuclear Activities (see *Nuclear Law Bulletin* No. 59) and the Decree on the National Atomic Energy Commission (see *Nuclear Law Bulletin* No. 62).

Belgium

General Legislation

*The Draft Belgian Act on the Phase-out of Nuclear Energy**

Currently, the Belgian Parliament is examining the draft Act on the Phase-out of Nuclear Energy. This draft was approved by the coalition government, comprised of the liberal, socialist and green parties, on 1 March 2002.

The purpose of this Note is to describe the origins of the draft Belgian Act on the Phase-out of Nuclear Energy and the main principles underlying this proposal. It should be pointed out, however, that at present this is simply a draft Act which is in the process of being adopted before the Belgian Parliament. It is therefore possible that the final text, as approved by Parliament, will differ from the draft approved by the government.

This Note will first address certain attempts to phase out nuclear energy which were made before the adoption by the current government of this draft Act on the Phase-out of Nuclear Energy (Part 1). Then we shall provide an overview of the political declarations of the coalition government on the phase-out of nuclear energy (Part 2). Important with regard to the adoption of the draft Act is the opinion delivered by a Commission of experts; the role of this Commission will be examined in Part 3. Finally, we shall look in more detail at the provisions of the draft Act itself (Part 4).

1. Attempts to phase out nuclear energy before the adoption of the draft Act

It should be pointed out that this is not the first time an attempt has been made to opt out of nuclear energy. Under previous governments, there were at least two other initiatives.

During the Parliamentary discussions on the draft Act on Protection of the Population and the Environment Against the Dangers of Ionising Radiation and providing for the setting up of the Federal Agency for Nuclear Control,[1] an amendment was proposed before the Public Health and Environment Commission. This amendment aimed to insert the following sentence in the section of the Act governing licensing of nuclear installations: "Issue of a licence, whether preliminary or operational, for a new nuclear electricity power plant shall be prohibited".[2]

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* This Note was kindly provided by Dr. Tom Vanden Borre and by Mr. Jan Michiels. Tom Vanden Borre is Scientific Collaborator to the Insitute for Energy Law and Environmental Law of the Catholic University of Leuven and is also Counsellor to the Belgian Prime Minister. Jan Michiels is Adviser to the General Manager of the Federal Agency for Nuclear Control. This article is written by the authors alone and does not represent the views of the Belgian Prime Minister, the Belgian Government or the Federal Agency for Nuclear Control.

1. These negotiations culminated in the adoption on 15 April 1994 of the Act on Protection of the Population and the Environment Against the Dangers of Ionising Radiation and providing for the setting up of the Federal Agency for Nuclear Control, published in the Official Journal (*Moniteur belge*) of 29 July 1994 (see *Nuclear Law Bulletin* Nos. 53, 54, 59, 61, 64 and 69).

2. Unofficial translation. *Documents Parlementaires*, Senate, 1992-1993, No. 610/2, pp. 46-47.

Also during the discussions on the draft Act on the Organisation of the Electricity Market,[3] the current Secretary for State for Energy and Sustainable Development, Mr. Olivier Deleuze, introduced an amendment[4] proposing to insert the following provision:

> "No further licences shall be issued for the establishment of new nuclear energy installations or for the transformation or renovation of existing nuclear power plants, except to the extent that such work is necessary to ensure the safety of the population or the protection of the environment".[5]

Both of these amendments were rejected.

Under the current government, the Secretary of State for Energy and Sustainable Development first of all wished to confirm the rejection of nuclear energy through the adoption of a Royal Decree, based on Section 4 of the Act of 29 April 1999 on the Organisation of the Electricity Market.[6] However, in its Opinion of 6 September 2001,[7] the Commission for the Regulation of Electricity and

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3. These negotiations culminated in the adoption on 29 April 1999 of the Law on the Organisation of the Electricity Market, published in the Official Journal (*Moniteur belge*) of 11 May 1999.

4. *Documents Parlementaires*, House, 1998-99, No. 1933/2, p. 1.

5. Unofficial translation.

6. Official Journal (*Moniteur belge*) of 11 May 1999. Section 4:

   1. The establishment of new installations for the production of electricity is subject to the prior issue of an individual licence by the Minister upon proposal of the Commission.
      Following the Opinion of the Commission, the King may, subject to any appropriate conditions:
      1) extend the scope of application of the first paragraph to the transformation or renovation of existing installations;
      2) exempt installations of limited power from the licensing procedure and subject them to a procedure providing for prior declaration to the Commission.
   2. Following the Opinion of the Commission, the King shall establish criteria for the issue of licences pursuant to Sub-section 1, paragraph 1. These criteria can focus upon:
      1) the security and safety of electrical networks, installations and related equipment;
      2) the energy efficiency of the proposed installation, in light of Belgium's international obligations particular in relation to environmental protection;
      3) the nature of primary sources;
      4) the reliability and professional experience of the applicant, its technical and financial capacity and the quality of its organisation;
      5) public service obligations in relation to regularity and quality in electricity supply, as well as in the supply of customers which are not eligible customers;
   3. Following the Opinion of the Commission, the King shall establish:
      1) the procedure to issue licences pursuant to Sub-section 1, paragraph 1, in particular the form of the request, the hearing of the application before the commission, time limits within which the Minister is required to make a decision and notify that decision to the applicant, and the fee to be paid to the Commission for its examination of the file;
      2) cases in which the Minister may revise or revoke the licences, and procedures governing this;
      3) effects upon the licence where the installation is transferred or where the licence-holder is subject to change in management, merger or division and, where necessary, conditions to be fulfilled and procedures to be followed in order to maintain or renew the licence in such cases.

7. Opinion No. 010906-CDC-29; this Opinion is available in Dutch and French on the Web site of the Commission (www.creg.be).

Gas (CREG) expressed some doubts as to whether the use of a Royal Decree as opposed to an Act to regulate the phase-out of nuclear energy would constitute an appropriate legal basis.

2. Political declarations of the coalition government on the phase-out of nuclear energy

The decision taken by the Belgian Government on the draft Act on the Phase-out of Nuclear Energy is based on the declaration of the coalition government of Mr. Guy Verhofstadt and on the governmental agreement of 7 July 1999.[8] This Agreement contains the main guidelines on the energy policy of the current government:

> "The Government eventually wishes to withdraw from the nuclear energy sector, respecting the objectives put forward by the Rio Conference and the Kyoto Protocol on CO_2 emissions. In order to give scientists enough time to design new alternative, renewable and pure energy sources on a large scale, Belgium will support a scenario for starting to deactivate nuclear power stations as soon as they are 40 years old. For this purpose, the Government will consult the European Environmental Agency, and question the commission of internationally recognised experts about the feasibility and execution of this scenario."

The determination of the current government to progressively abandon nuclear energy was confirmed in the Federal Plan on Sustainable Development, approved by the Council of Ministers on 20 July 2000 and confirmed in a Royal Decree of 19 September 2000 pursuant to the Act of 5 May 1997 on the Co-ordination of Federal Policy on Sustainable Development:

> "The third objective is to withdraw from nuclear energy. This involves in particular organising a strategy for Belgium pursuant to which nuclear power plants will be deactivated as soon as they reach 40 years of age and also providing for a moratorium on reprocessing. As this strategy is regularly contested in the debate on the relationship between nuclear policy and climate policy, the Government shall draft a Note justifying this choice. This Note shall examine the planetary impact of the generalisation of the use of nuclear energy, ideas on the use of nuclear energy in the long term, the incorporation of the dismantling of power plants into a policy for the reduction of CO_2 and changes in modes of energy consumption, and scientific uncertainties in relation to nuclear energy. This Note will be made public in mid-2001. All of the information available, such as the results of the AMPERE Commission, is part of this debate."[9]

The desire of the government to phase-out the industrial production of nuclear electrical energy was confirmed in the declaration of federal policy of 9 October 2001, pursuant to which a draft Act on the deactivation of nuclear power plants after 40 years should be introduced in the months to come.

Finally, in the "Note on Economic and Social Priorities 2002-2003", approved by the Council of Ministers on 18 January 2002, "the submission of the draft Act on the Phase-out of Nuclear Energy" is cited as a priority.

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8. "The Way to the 21st Century – Government Agreement" of 7 July 1999; available in Dutch and French at www.belgium.fgov.be, click under "*politique*"; available in English at www.premier.fgov.be, click "policy".

9. Unofficial translation.

3. The role of the AMPERE Commission

During the adoption of the draft Act, the Belgian government consulted a commission of experts. The AMPERE (Analysis of the Means of Production of Electricity and the Restructuring of the Electricity Sector) Commission was established under the previous legislature.[10]

Following the governmental agreement of 7 July 1999, a Royal Decree was adopted on 25 November 1999 completing the terms of reference of the AMPERE Commission[11] to allow it to examine the feasibility and the implementation of the scenario according to which the deactivating of nuclear power plants would commence once they reached 40 years of age. The current government has maintained for the most part the composition and mission of this Commission.

This mission focused on the examination of the following issues:

(a) the general economic and energy context: description of the international context and the current tendencies on the primary energy source markets, evaluation of the general context and identification of developments expected for Belgium;

(b) the electricity demand in Belgium: evaluation of the current demand, evolution of this demand in the medium and long-term taking into account in particular best international practices in terms of demand-side management;

(c) electricity production technologies: study of technologies currently used in the country, examination of alternative or developing technologies which have potential for the production of electricity; analysis of their social, economic and environmental implications, particularly in relation to radioactive waste management (evaluation of costs for the management of radioactive waste and the dismantling of nuclear power plants and other installations of the nuclear fuel cycle), greenhouse gas emissions and other atmospheric pollutants.

The final report of the Commission was published in October 2000. In this report, the Commission formulated recommendations and proposals aiming to identify, on the basis of the current situation in Belgium, choices for the future production of electricity:

> "To ensure the operational safety of the electronuclear sector, public safety and health, the Commission considers that it is necessary to maintain a scientific and technological potential which will allow electricity producers to ensure that their production takes place in the most efficient manner possible and under optimum safety conditions.
>
> This implies that research and development activities be continued in the nuclear field, within reasonable budgetary limits. It further requires training programmes which can maintain, now and in the future, the necessary level of skills of personnel in the electronuclear sector, whether in the private sector (operators in the electronuclear cycle: the back end of the nuclear fuel cycle, production of nuclear energy, treatment of irradiated fuel and disposal of fuel) or the public sector (agencies for the management of the back-end of the nuclear fuel cycle and the

10. Royal Decree of 19 April 1999 establishing a Commission for the Analysis of the Means of Production of Electricity and the Restructuring of the Electricity Sector, published in the Official Journal (*Moniteur belge*) of 29 January 2000.

11. Official Journal (*Moniteur belge*) of 29 January 2000.

control of the nuclear sector). This also implies that the State, which is the guardian of public safety, continues to have research bodies and supervising institutions which are competent and independent from the economic sector at its disposal.

Furthermore, the Commission is of the opinion that the electronuclear option should be maintained open for the future in the event of an increase in the price of hydrocarbons (including natural gas) and in light of the absence of greenhouse gas releases from nuclear energy. To do this, it is necessary to maintain national expertise, private and public, in the electronuclear sector, and also to participate in research and development, mostly of a private nature, into future branches.

Maintaining the electronuclear option open does not imply any obligation whatsoever to return to such branches. This choice in a democratic society is that of Parliament alone. It is explained by the fact that future technical developments in the electronuclear sector should be appreciated on their merits in several fields, including operational safety, the limitation of the contamination area in the event of an accident, the management of the back-end of the nuclear cycle and in particular the conditioning and management of waste, and the technical cost of production.

All of the efforts necessary to keep the nuclear option open should not be confined to the Belgian context: national initiatives would benefit substantially from international co-operation (in particular at European level) mobilising complementary experience obtained in different fields such as the development of new electronuclear techniques or the disposal of nuclear waste. This last point would certainly benefit from an examination at European, or even international level."[12]

In application of the governmental agreement, the government requested five international experts to carry out an evaluation of the AMPERE report. The report of this International Peer Review Group was issued in April 1999 and deemed the AMPERE report to be an accurate one.

4. The draft Act on the Phase-out of Nuclear Energy for the Industrial Production of Electricity

In this Part, further details shall be provided on the procedure for adoption of the draft Act (4.1), on the concerns of the government in adopting this draft (4.2) and on the content of the draft Act itself (4.3).

4.1 Governmental decisions and procedure

The first draft of the Act "on the Phase-out of Nuclear Energy for the Industrial Production of Electricity" was approved by the Council of Ministers on 1 March 2002.

The Council of State provided its opinion on 6 June 2000. This Opinion was essentially composed of technical and drafting remarks. The government slightly modified the text of the first draft of the Act and then the Council of Ministers approved the draft on 28 June at second reading.

12. Unofficial translation.

The draft Act was submitted to the House of Representatives on 8 July 2002. The text of the draft Act, as submitted to Parliament, is available in Dutch and French on the Internet.[13]

Although the Government had requested the Parliament to treat this file as a matter of urgency, the Economics Commission of the Chamber, entrusted with the task of examining the draft Act, decided to organise a number of hearings. In the meantime, this Commission also invited and heard certain specialists and the social organisations. On 12 November 2002, some minor amendments to the text were accepted in the Commission. On 19 November 2002, the Economics Commission voted and approved this draft text.

Following this vote of the Commission, there will be a vote in plenary session of the House of Representatives on this text. Following this, it is possible that the Senate may use its right of evocation which would mean that the Senate would also vote on this draft Act. If the Senate uses its right, it cannot be excluded that additional amendments to the text will be voted. In any event, the text must be returned to the House of Representatives. According to Belgian law, an identical text needs to be approved by both the House and the Senate. As soon as the Parliament has approved the text, it is ready to be approved and promulgated by the King. Finally, the Act will be published in the Official Journal (*Moniteur belge*).

4.2 Governmental concerns

In adopting the draft Act, the government expressed concerns on the potential consequences of the phase-out of nuclear energy in relation to the security of electricity supply, international commitments on climate change and the desire to maintain nuclear expertise.

The government is relying upon the development of alternatives which would allow the replacement of nuclear production, such as a reduction in demand due to more rational uses of energy, as well as the establishment of replacement production capacities using renewable energy sources, cogeneration installations and natural gas stations.

In order to implement these alternatives, the government also requires the collaboration of energy producers (to substitute non-nuclear capacity), the management of the cable network (to develop exchange capacity) and the regions (which are competent in respect of the rational use of energy, environmental licensing requirements, policy in respect of CO_2 etc.). These bodies may not then invoke the case of *force majeure*. The Commission for the Regulation of Electricity and Gas (CREG) is responsible for monitoring this situation closely.

The Explanatory Memorandum devotes an extensive chapter to the interface between the phase-out of nuclear energy and climate policy. With regard to the Kyoto Protocol, Belgium has committed itself to reduce its annual greenhouse gas emissions, including CO_2, by 7.5% during the period 2008-2012, as compared to the reference year 1990.

The government also wishes to avoid a situation whereby the phase-out of nuclear energy would have negative repercussions on the nuclear research and nuclear safety fields.

13. Draft Law on the Phase-out of the Nuclear Energy for the Industrial Production of Electricity, *Documents Parlementaires*, Session 2001-2002, 1910/001, www.lachambre.be.

4.3 The content of the draft Act

First, it should be pointed out that the draft Act does not intend to ban all forms of energy production which result from the fission of nuclear fuel, but simply those designed for the industrial production of energy. In fact, the two key sections of the draft Act (Sections 3 and 4) only apply to "nuclear power plants designed for the industrial production of electricity resulting from the fission of nuclear fuel".

Pursuant to the phase-out scenario envisaged under the current draft Act, the oldest nuclear power plant (i.e. Doel 1) would be deactivated starting in 2015. The other plants would then follow according to the date upon which they entered into service, so that in 2025 no nuclear power plants will be in operation in Belgium. It is therefore, as the title of the Act suggests, a "phase-out" of nuclear in the industrial production of energy.

The structure of the draft Act is very simple and only contains nine sections out of which Sections 3 and 4 form the basis of the text. Section 9 concerns *force majeure*; the other sections are of a rather technical nature as they modify the provisions of two existing Acts in order to streamline them with the basic principles of this draft Act.

Two closely related principles are established in the second chapter of the draft Act:

- Section 3 states that no new nuclear power plant for the industrial production of energy resulting from the fission of nuclear fuel may be established or operated;

- Section 4 states that existing nuclear power plants should be deactivated and may no longer produce industrial electricity 40 years after their entry into service. In practice, this provision refers to the four nuclear power plants at Doel and the three plants at Tihange.

In order to avoid any discussion on the date of entry into industrial service, Section 2(1) defines this as "the date of the formal agreement between the electricity producer, the constructor and the engineering department according to which the "project" stage is finalised and the production stage commences". These dates are then set out for each of the seven NPPs concerned. Therefore the first NPP is scheduled to close on 14 February 2015 and the last would close on 31 August 2025.

In this context, it should be emphasised that the draft Act provides that all individual operating licences for the industrial production of electricity, granted in the past for an unlimited period, will expire 40 years after the date of entry into industrial service of the installation concerned.

Section 9 of the draft empowers the King to postpone the planned closure of NPPs in the case of *force majeure* and, if necessary, to authorise the construction of new NPPs (by royal decree examined in the Council of Ministers). Only a threat to supply security could be invoked, which would imply an unforeseen reason. The Explanatory Memorandum provides that operators of NPPs cannot use this *force majeure* clause, although this restriction is not expressly set out in the text of the law.

With a view to closely following the situation *vis-à-vis* supply security, the Commission for the Regulation of Electricity and Gas (CREG) was invested with further missions (commencing in 2015, the indicative plan for the electricity sector will be prepared every year rather than every three years).

Applying these guidelines, the draft Act contains articles which aim to amend the Act of 15 April 1994 on Protection of the Population and the Environment Against the Dangers of Ionising

Radiation and providing for the setting up of the Federal Agency for Nuclear Control and the Act of 29 April 1999 on the Organisation of the Electricity Market.

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Radiation Protection

Royal Order on the Protection of Workers Against the Hazards of Ionising Radiation (2002)

This Royal Order of 2 April 2002 entered into force on 20 June 2002. It amends the Royal Order of the same title of 25 April 1997 (see *Nuclear Law Bulletin* No. 60) in order to harmonise the Belgian legislation with the provisions of Council Directive 90/641/Euratom of 4 December 1990 on the operational protection of outside workers exposed to the risk of ionising radiation during their activities in controlled areas (see *Nuclear Law Bulletin* No. 47).

Pursuant to this Royal Order, a radiological passport is established for each outside worker operating in controlled areas. Outside workers are subject to an evaluation of their exposure and to medical surveillance, details of which are recorded in the radiological passport. The dosimetric data of each worker is considered to be personal medical information and is protected.

The Royal Order specifies the tasks of the Industrial Health and Medicine Department and the physical protection services of nuclear operators.

Food Irradiation

Royal Order on the Treatment of Food and Food Ingredients by Ionising Radiation (2002)

This Royal Order of 12 March 2002, which entered into force on 14 March 2002, amends the Royal Order of 20 July 2001 establishing General Regulations for the Protection of the Population, Workers and the Environment against the Dangers of Ionising Radiation (see *Nuclear Law Bulletin* No. 69). It repeals the Order of 16 July 1980 regulating the treatment by ionising radiation of food for human and animal consumption (see *Nuclear Law Bulletin* No. 28). The Royal Order aims furthermore to implement Directive 1999/2/EC of the European Parliament and of the Council of 22 February 1999 on the approximation of the laws of the Member States concerning foods and food ingredients treated with ionising radiation (see *Nuclear Law Bulletin* No. 67), Directive 1999/3/EC of the European Parliament and of the Council of 22 February 1999 on the establishment of a Community list of foods and food ingredients treated with ionising radiation and Directive 2000/13/EC of the European Parliament and of the Council of 20 March 2000 on the approximation of the laws of the Member States relating to the labelling, presentation and advertising of foodstuffs.

The Royal Order establishes the legal framework governing the treatment of foodstuffs by ionising radiation. It refers to the list of foodstuffs whose treatment by ionising radiation is permitted, which is reproduced in above-mentioned Directive 1999/3/EC. Requests to treat foodstuffs not included on this list by ionising radiation are submitted to the Higher Council for Health.

Operators of irradiation facilities are required to participate in dosimetric controls and they must maintain a register for each batch of foodstuffs treated.

The import and export of foodstuffs treated by ionising radiation are regulated by the Order. Their import is permitted where the irradiation has taken place at an authorised installation pursuant to the list published in the Official Journal of the European Communities. Where this is not the case, import is subject to a licence granted by the Federal Agency for Nuclear Control.

Bulgaria

General Legislation

*Act on the Safe Use of Nuclear Energy (2002)**

The Act on the Safe Use of Nuclear Energy for Peaceful Purposes (Atomic Energy Act), adopted on 28 June 2002, governs all nuclear activities in Bulgaria. This legislation, which repeals and replaces the 1985 Act on the Use of Atomic Energy for Peaceful Purposes as amended,[14] establishes principles governing safety in the use of nuclear energy and ionising radiation, radioactive waste and spent fuel management and the rights and obligations of persons who perform activities pursuant to this Act.

Bulgaria has chosen to regulate legal matters in the field of nuclear energy by centralising them in one single piece of legislation rather than several laws on separate matters, which guarantees to a greater extent the effectiveness of this legislation. There are two basic principles governing the safe use of nuclear energy: nuclear safety has priority over all other aspects of this activity and the exposure of the workers and the public to ionising radiation must be kept at the lowest reasonably achievable level (Article 3).

State regulation is carried out by the President of the newly-established Nuclear Regulatory Agency (NRA), which takes over the rights, obligations, assets and liabilities of the Committee for the Use of Atomic Energy for Peaceful Purposes (CUAEPP).[15] The NRA President is an independent specialised state authority whose competence is established by this Act. He/she is designated for a period of five years by a decision of the Council of Ministers and appointed by the Prime Minister. The President has extensive authority to represent the NRA in relation to the issue, modification, extension, renewal, suspension and revocation of licences and authorisations to perform activities pursuant to the Act. He/she is also responsible for the organisation and co-ordination of the implementation of Bulgaria's obligations ensuing from the Agreement between the People's Republic of Bulgaria and the International Atomic Energy Agency for the Application of Safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons as well as on the Additional Protocol to that Treaty.

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* This note was kindly provided by Mr. Georgi Karadzhov, Acting Head of the Legal Division of the Bulgarian Nuclear Regulatory Agency, formerly the Committee on the Use of Atomic Energy for Peaceful Purposes.

14. The text of this Act, as amended in 1995, was reproduced in the Supplement to *Nuclear Law Bulletin* No. 58.

15. The CUAEPP was transformed into the NRA pursuant to a Decree of the Council of Ministers of 22 August 2002, as scheduled under the new Atomic Energy Act.

To carry out those activities, the President is assisted by an administration, which is organised within the NRA. The NRA is a financially independent legal entity based in Sofia. On 10 September 2002, a Code of Regulation of the NRA was adopted by the Council of Ministers, providing the President with wider budgetary powers. The NRA therefore has a greater level of autonomy in financial matters. The Agency's activities are funded by the state budget and by revenue from taxes collected as well as by donations. The Act establishes priorities with regard to expenditure in the Agency's budget – funding of research, analyses and expertise is to take first place.

The activities covered by this Act are performed by physical or legal entities based on licences and authorisations issued by the NRA President. For the first time in Bulgarian legislation, licences are issued as individual administrative acts necessary to commence any activities regulated by the Act.

This licensing regime liberalises the sector for foreign or Bulgarian investors. Long-term licences can be issued – up to ten years for the most important activities. Once obtained, the licence can be revoked on very few occasions in accordance with the Act. The President exercises control over the activities covered by the licence. In this way, the need to obtain successive authorisations is dispensed with. The operation of a nuclear facility is subject to delivery of a licence. Where the activity is for a shorter period of time and is of less importance, authorisations are issued. The time necessary to issue a licence is on average nine months and for an authorisation, one month.

In accordance with Article 24 of the Act, the granting, modification and refusal of licences and authorisations, including tacit refusal, are subject to appeal before the Supreme Administrative Court.

Article 25 deals with the transitional transport of nuclear material, radioactive waste and spent nuclear fuel. This can be done upon delivery of an authorisation from the President of the NRA.

The licence to operate a nuclear facility is issued to a legal entity, registered in the Republic of Bulgaria, which is the owner or holder of property rights over the nuclear facility and possesses the necessary financial, technical, material and human resources. The certificates demonstrating legal capacity are to be issued by the President or a person holding a licence pursuant to the provisions of this Act.

Of particular importance is Article 6 on special rules for the operation of nuclear power plants. A nuclear power plant may be constructed following a decision by the Council of Ministers upon a proposal submitted by the Minister of Energy and Energy Resources with an assessment of the nuclear safety and radiation protection situation, the environmental impact and the physical protection, social and economic significance of the construction, and the management of radioactive waste and spent nuclear fuel generated as a result of the nuclear power plant's activity. It is necessary to obtain two licences – one for the generation of electricity and/or heat in accordance with the Act on Energy and Energy Efficiency and the other pursuant to this Act. The issuing of authorisations and licences pursuant to this Act shall be a precondition for entry into force of the authorisations and licences issued pursuant to the Act on Energy and Energy Efficiency.

An important part of the Act deals with two funds – the Decommissioning of Nuclear Facilities Fund and the Radioactive Waste Fund. They are established within the Ministry of Energy and Energy Resources. The revenue of these Funds shall be generated through payments by persons operating a nuclear power plant or as a result of whose activity radioactive waste is generated, resources from the state budget, interest, donations and other contributions. The amount of the payments shall be determined by regulations of the Council of Ministers on the basis of a joint proposal by the Minister of Energy and Energy Resources and the Minister of Finance. The Funds are to be managed by

Steering Committees comprising nine members including the Minister of Energy and Energy Resources as President.

Of particular importance also is Article 73 which states that nuclear material, sources of ionising radiation or radioactive waste whose owner is not known shall become the property of the State and the President shall nominate the person to whom they will be consigned. In accordance with Article 73(3), nuclear material which is acquired in violation of the provisions of the Act shall be confiscated by an order of the President.

The provisions on the accounting and control of nuclear material, radioactive substances and other sources of ionising radiation govern the obligations of persons who manufacture, process, store or use such material, substances or sources.

The Act establishes an Enterprise for Radioactive Waste which shall perform its activities in accordance with the authorisations for the siting, design, construction and commissioning, and on the basis of a licence to operate a radioactive waste management facility, issued by the President. Licences and authorisations may be issued to holders of licences and authorisations for the operation of nuclear facilities.

The regulatory control over the use of nuclear energy and ionising radiation and of the management of radioactive waste and spent fuel is the responsibility of the President, who is authorised to take preventive, current and follow-up control. The President can authorise certain officials called inspectors to exercise control under this Act. They are required to prepare a protocol of findings containing the results from the inspections, which shall then be submitted to the licence-holder who is entitled to provide explanations and objections within a one–week period. Based on the results, inspectors can issue mandatory instructions, report acts of administrative violations or propose to the President to implement coercive administrative measures.

Chapter 6 defines the areas with special status – the radiation protection area and the controlled area. The former is established with a view to minimising the exposure of the public during an accident, the latter is the territory outside the limits of the radiation protection area where control for the purposes of radiation protection is carried out. The radiation protection area is established by an order of the Minister of Regional Development and Public Works co-ordinated with the NRA President and the controlled area is established by an order of the NRA President.

Chapter 7 on physical protection is based on the 1979 Convention on the Physical Protection of Nuclear Material.[16] The NRA President acts as central authority and contact point responsible for the physical protection of nuclear material pursuant to Article 5(1) of the Convention.

Chapter 8 on emergency planning and emergency preparedness establishes both the off-site and on-site emergency plan. The off-site emergency plan determines the areas for emergency planning and delineates the actions of the competent authorities for protection of the public, health, property and the environment in the event of an accident and the on-site emergency plan determines the actions of the licensee to minimise the scope of the accident and eliminate its consequences in accordance with the off-site emergency plan. The conditions governing the development of emergency plans are established by a regulation by the Council of Ministers upon a proposal of the specialised state authority on civil protection and the NRA President.

16. The text of this Convention is reproduced in the Supplement to *Nuclear Law Bulletin* No. 24.

The NRA President is a co-ordinator for the implementation of the obligations of the Republic of Bulgaria ensuing from the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (see *Nuclear Law Bulletin* Nos. 5, 36, 55 & 56), and the Agreement between the People's Republic of Bulgaria and the International Atomic Energy Agency for application of Safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons and the Additional Protocol.

Chapter 10 regulates civil liability for nuclear damage. The most important Article is 132(1) which provides that the liability of the nuclear operator is limited to USD 48 million (USD).

The Chapter on administrative penal provisions establishes administrative sanctions varying from 500 to 150 000 levs.[17] Fines are charged for physical persons and property sanctions are imposed upon legal entities. New and important sanctions include limitation or termination of the activity or temporary revocation of the certificate demonstrating legal capacity. They are imposed by an order of the President and may be appealed before the Supreme Administrative Court.

The most important transitional and final provisions are Section 4 governing procedures on issuing authorisations and certificates of capacity initiated pursuant to the former Act on the Use of Atomic Energy for Peaceful Purposes. These procedures shall be completed according to the former legislation and Section 19, item 2, which provides that "Prior to issuing the implementing legislation and regulations envisaged by this Act, the legislation and regulations issued for the implementation of the Act on the Use of Atomic Energy for Peaceful Purposes shall remain in force to the extent that they are not in contradiction with the new Act".

To conclude this brief overview on the new legislation, it appears that in comparison with the previous Act, the NRA President has much larger powers. He/she becomes the most important authority in Bulgaria in the field of the safe use of nuclear energy. The independence of the Bulgarian regulatory authority is strengthened with the attribution of budgetary autonomy to its President and through the increase of its personnel from 80 to 102 people by the Council of Ministers. The implementation of the new licensing regime will facilitate foreign and national investment in the fields of nuclear safety and radiation protection. The provisions governing physical protection, applications of safeguards and civil liability for nuclear damage are more precise and up-to-date. The liberalisation of the regime will allow private persons to work in this sector. It should be emphasised that this Act simply regulates the most important framework issues and therefore we now need to prepare numerous implementing ordinances. Upon completion of this exercise, this new legislative framework should strengthen Bulgaria's position in the negotiations with the European Commission on accession to the European Union.

The text of this new legislation will be published in the Supplement to the next edition of the *Nuclear Law Bulletin*.

17. This corresponds to a range between USD 258 and USD 77 546.

Canada

Radioactive Waste Management

Nuclear Fuel Waste Act (2002)

The Nuclear Fuel Waste Act (Statutes of Canada 2002, Chapter 23) was enacted on 13 June 2002 and entered into force on 15 November 2002. The Act provides a framework for the long-term management of nuclear fuel waste in Canada by putting the onus on the owners of the waste to study approaches to managing the waste, to recommend an approach to the Government of Canada and to finance the long-term management of the waste.

The Act requires nuclear energy corporations to establish a non-profit waste management organisation (WMO) which must propose to the Government of Canada, within three years of the coming into force of the Act, approaches for the management of nuclear fuel waste and must implement the approach that is selected by the Government. Each of the following methods must be the sole basis of at least one approach studied by and reported to the government by the WMO:

- deep geological disposal in the Canadian Shield;
- storage at nuclear reactor sites; and
- centralised storage, either above or below ground.

The Act provides that the WMO must consult with the general public, and in particular aboriginal peoples, on each of the proposed approaches for the management of the waste.

In relation to requirements under the Act, the new legislation assigns responsibility for oversight of the WMO, the nuclear utilities and Atomic Energy Canada Limited (AECL) to the Government of Canada. This oversight responsibility will reside within Natural Resources Canada.

Under the provisions of the Act, nuclear energy corporations and AECL must finance the long-term management of nuclear fuel waste by establishing trust funds. The amounts that they must contribute to the trust funds are specified in the Act. These amounts vary for each entity. The funds may only be used by the WMO to implement the approach selected by the Government and the first withdrawal of funds may only be made for an activity in respect of which a construction or operating licence has been issued under the Nuclear Safety and Control Act (the text of this Act is reproduced in the Supplement to *Nuclear Law Bulletin* No. 60) after the Government has made a decision on the approach. Once the approach is implemented, the WMO is required to offer its waste management services at a reasonable cost to AECL and all owners of nuclear fuel waste produced in Canada.

The WMO must report to the Government of Canada annually on its activities. The study, reports and financial statements that the WMO is required to submit to the Minister of Natural Resources must be made available to the public.

The Act sets out offences and punishments if a nuclear energy corporation, AECL or the WMO fail to comply with it.

The text of this legislation is available in English at: www.parl.gc.ca/37/1/parlbus/chambus/house/bills/ government/C-27/C-27_4/C-27_cover-E.html

France

Organisation and Structure

Order Establishing an Advisory Council on the Use of Nuclear in Defence Operations (2002)

An Order of 13 March 2002 establishes an Advisory Council on the Use of Nuclear in Defence-Related Nuclear Activities (*Conseil de l'exploitation nucléaire pour les activitiés nucléaires intéressant la défense* – CEND) within the Ministry of Defence. The objective of the CEND is to examine the coherence of the operations of the Defence Minister with regard to nuclear safety requirements and operational, industrial or financial obligations. It also provides opinions and recommendations on such operations.

Pursuant to this Order, the CEND shall examine:

- nuclear policy questions submitted to the Minister for decision;
- application of defence-related nuclear security policy and evaluation of its results;
- consequences of any developments in the basic principles of nuclear safety on the operational use of the armed forces;
- whether the mechanisms of the Defence Minister fulfil nuclear security requirements.

The CEND is headed by the Armies General Staff.

Decree on the Inspectorate for Nuclear Weapons (2002)

Decree No. 2002-702 on the Inspectorate for Nuclear Weapons was adopted on 29 April 2002 replacing the Decree of 22 January 1970 establishing this Inspectorate. It describes the organisation and specifies the objectives of this Inspectorate, which is headed by a nuclear weapons inspector and is placed directly under the authority of the President of the Republic.

The Inspectorate is responsible for controlling the application of measures which ensure governmental control over nuclear weapons in respect of:

- the triggering at any moment of nuclear forces by the Head of State;
- the guarantee that nuclear weapons will not be used except under official governmental instructions.

The mechanisms at the disposal of the inspector for this purpose are established by an order of the Minister for Defence, upon the agreement of the Minister responsible for Industry in relation to any resources coming from the Atomic Energy Commission.

Decree on the Organisation and Operation of the French Agency for Environmental Health Safety (2002)

Decree No. 2002-299 of 1 March 2002 sets out the *modus operandi* of the French Agency for Environmental Health Safety (*Agence française de sécurité sanitaire et environnementale* – AFSSE), established by Act No. 2001-398 of 9 May 2001 (see *Nuclear Law Bulletin* No. 68), and amends the Public Health Code.

The French Agency for Environmental Health Safety aims to ensure health safety and evaluate health risks related to the environment and to provide the government with the expertise and scientific and technical support necessary for the drafting and implementation of legislative and regulatory provisions.

The AFSSE is a public administrative body. It comprises a Board of Management of 24 members, nominated for three years by a joint order of the Minister responsible for Health and the Minister responsible for the Environment. At the head of the Board of Management is a Chairperson, assisted by a Vice-Chairperson, both of whom are also nominated for three years.

The AFSSE also has a Director General nominated for a period of three years and a Scientific Council which defines national policy in relation to research on environmental health safety.

Radiation Protection

Decree on the General Protection of Persons Against Ionising Radiation (2002)

Decree No. 2002-460, adopted on 4 April 2002, repeals Decree No. 66-450 of 20 June 1966 on the General Principles of Protection against Ionising Radiation (see *Nuclear Law Bulletin* No. 1) and Decree No. 82-203 of 26 February 1982 on Measurement Units and Control of Measuring Instruments. It redefines the basic principles in relation to health protection of the public and workers in order to implement 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 (see *Nuclear Law Bulletin* Nos. 58 and 61).

This Decree re-drafts Chapter V-1 of Book 1, Title 1 and repeals Chapter II of Book V, Title III of the Public Health Code. It also takes into account the reform of the control and expert bodies in the nuclear field with the establishment, on 22 February 2002, of the Institute for Radiation Protection and Nuclear Safety (*Institut de radioprotection et de sûreté nucléaire* – IRSN) and the General Directorate for Nuclear Safety and Radiation Protection (*Direction générale de la sûreté nucléaire et de la radioprotection* – DGSNR) (see *Nuclear Law Bulletin* Nos. 68 and 69).

With regard to the general measures for the protection of the public against ionising radiation, the Decree confirms the reduction in annual effective dose for members of the public to 1 mSv per annum, as established by Decree No. 2001-215 of 8 March 2001.

A national network of environmental radioactivity measurements is established. It is to be managed by the IRSN which is also responsible for the national inventory of sources of ionising radiation. This network brings together the different results from environmental analysis prescribed by regulations, and tests carried out by the different services of the State and public bodies, territorial communities and associations. These results are available to the public.

The Decree extends the prohibitory regime concerning the intentional addition of radioactive substances into consumer goods, and establishes the principle of prior authorisation for any planned release of liquid or gaseous waste and waste contaminated by radio-nuclides resulting from nuclear activities, with the exception of installations subject to a particular regulatory regime. Waste and effluent produced by medical establishments are included.

The provisions relating to exposure to naturally-occurring ionising radiation are extended to all professional activities using materials which naturally contain radio-nuclides which are not used for their radioactive properties but which may cause exposure that could damage the health of workers and the public. Monitoring activities in relation to exposure to radon shall be stepped up in public buildings.

Furthermore, the Decree provides for a reform of the general regime governing licensing and declarations in respect of medical and research applications previously covered by Article L. 1333-4 of the Public Health Code. The manufacture, possession, distribution (including import and export) and use of radio-nuclides or of products or apparatus containing radio-nuclides, and the use of x-ray apparatus are all covered. The regime established by this Decree repeals and replaces the regime established under the Interministerial Commission on Artificial Radioisotopes (*Commission interministérielle des radioéléments artificiels* – CIREA) (see *Nuclear Law Bulletin* No. 23).

This new regime also removes the CEA's derogations from permanent licensing requirements for the preparation, import or export of artificial radioisotopes. Finally, pursuant to Article L. 1333-4 of the Public Health Code, licences relating to industries governed by the Mining Code, major nuclear installations, major nuclear installations classified as secret and installations classified for environmental protection purposes, dispense with licensing requirements under radiation protection provisions.

Regime of Nuclear Installations

Order on Information of the Public (2002)

An Order was adopted on 21 February 2002 in implementation of Decree No. 2001-470 on Information of the Public (see *Nuclear Law Bulletin* No. 69) and modifies Decree No. 88-622 on Emergency Plans.

Pursuant to this Order, the operators of installations or sites which are subject to an off-site emergency response plan (*plan particulier d'intervention* – PPI) or a specialised emergency plan are required to establish information documents for the public residing within the zone to which the plan applies.

The Order provides details on the information which must be contained in such documents and provides for a deadline of three months after the entry into operation of new installations within which these documents must be established. The deadline is extended to two years (before 27 February 2004) for existing installations whose mechanisms for dissemination of information do not comply with the provisions of this Order.

Food Irradiation

Order on the Authorisation for and Control and Verification of Installations for the Treatment of Foodstuffs by Ionising Radiation (2002)

An Order was adopted on 8 January 2002 in implementation of Decree No. 2001-1097 on Treatment by Ionising Radiation of Foodstuffs Destined for Human or Animal Consumption (see *Nuclear Law Bulletin* No. 69). The Order sets out the procedures governing the authorisation of establishments which treat foodstuffs or other products or drinks for human consumption by ionising radiation. The authorisation involves attribution of an identification number to installations. It also imposes control measures and dosimetric verifications of installations for the treatment of such foodstuffs by ionising radiation.

Germany

Radiation Protection

Amendment of the X-Ray Ordinance and Other Atomic Ordinances (2002)

On 18 June 2002, the Federal Government issued an Ordinance to Amend the Ordinance on X-Rays and Other Atomic Ordinances (*Bundesgesetzblatt* 2002 I, p. 1869) which, in accordance with its Section 6, entered into force on 1 July 2002.

Section 1 of the Ordinance amends the X-Ray Ordinance of 1987 as amended (see *Nuclear Law Bulletin* Nos. 39, 47, 59 and 68). The amendment aims to implement Council Directives 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 (see *Nuclear Law Bulletin* No. 58) and 97/43/Euratom of 30 June 1997 on health protection of individuals against the dangers of ionising radiation in relation to medical exposure (see *Nuclear Law Bulletin* No. 60) as far as these Directives apply to the use of x-rays. Another reason to amend the X-Ray Ordinance was the new developments in the field of medicine concerning the use of digital technology which require adaptation of the legal framework, in particular with regard to medical documentation.

The new Ordinance, with a view to protecting the general public against radiation exposure during the use of x-rays, lowers the effective dose limit from 1.5 to 1 millisievert (mSv) per calendar year. The dose limit for persons professionally exposed to radiation was also reduced from 50 to 20 mSv.

In order to reduce the risk of radiation exposure, medical doctors, dentists, veterinarians and other persons who use x-rays are required to update their technical knowledge every five years through certification.

The Ordinance furthermore amends the following Ordinances:

- Radiation Protection Ordinance of 20 July 2001 (see *Nuclear Law Bulletin* No. 68);
- Ordinance on Advanced Financial Contributions towards Construction of Federal Installations for Safe Containment and Disposal of Radioactive Waste (see *Nuclear Law Bulletin* Nos. 30, 39 and 46);
- Financial Security Ordinance (see *Nuclear Law Bulletin* Nos. 18, 19 and 69);
- Ordinance on Persons Responsible for Nuclear Safety and on Notification of Safety Related Events (see *Nuclear Law Bulletin* Nos. 51 and 68).

Hungary

Radiation Protection

Order on the Operational Radiation Protection of Outside Workers (2001)

This Order No. 30/2001 was adopted by the Minister of Health on 3 October 2001. It aims to implement the principles established in Council Directive 90/641/Euratom of 4 December 1990 on the Operational Protection of Outside Workers Exposed to the Risk of Ionising Radiation during their Activities in Controlled Areas (see *Nuclear Law Bulletin* No. 47). The Order implements in particular the principles of justification, optimisation and dose limitation and contains provisions governing dosimetric monitoring, inspection by the authority and the respective obligations of outside workers and of the licensee of controlled areas.

Order on the Protection of the Health of Persons Exposed to Ionising Radiation for Medical Purposes (2001)

This Order No. 31/2001 was adopted by the Minister of Health on 3 October 2001. It establishes conditions governing the application of medical radiological procedures, including the optimisation of medical exposure and reduction of potential exposure, duties of medical personnel in connection with the application of such procedures, the employment of medical physicists, control of radiological equipment, training of personnel and inspection by the competent authority.

This Order aims to implement Council Directive 97/43/Euratom of 30 June 1997 on Health Protection of Individuals against the Dangers of Ionising Radiation in Relation to Medical Exposure (see *Nuclear Law Bulletin* No. 60).

These requirements apply to persons exposed to ionising radiation for the purposes of medical treatment, who have to take a medical examination or an aptitude test in connection with a job or a medical screening test, forensic medical examination or for medical scientific research purposes.

Radioactive Waste Management

Decree on the Licensing of Shipments of Radioactive Waste Across the National Border (2002)

This Decree No. 32/2002, adopted on 1 March 2002, aims to implement Council Directive 92/3/Euratom of 3 February 1992 on the Supervision and Control of Shipments of Radioactive Waste between the Member States and Into and Out of the Community (see *Nuclear Law Bulletin* No. 49).

It regulates the licensing of shipments of radioactive waste to, from or in transit through Hungary and entrusts the Hungarian Atomic Energy Authority with the task of applying these rules. Pursuant to the Decree, such shipments should be monitored from the point of departure to the point of destination. The transport operations necessary for the shipment shall comply with national provisions and with international agreements on the transport of radioactive material.

Environmental Protection

Decree on Environmental Impact Assessment (2001)

This Decree No. 20/2001 was adopted on 14 February 2001 and replaces Government Decree No. 152/1995 on Activities Requiring the Completion of an Environmental Impact Assessment and on the Detailed Rules of the Connected Administrative Procedure. It is based upon Act No. LIII of 1995 on Environmental Protection and aims to implement Council Directive 85/337/EEC of 27 June 1985 and Council Directive 97/11/EC of 3 March 1997 on the Assessment of the Effects of Certain Public and Private Projects on the Environment (see *Nuclear Law Bulletin* No. 60).

The Decree regulates in detail the rules of environmental impact assessment. It established a more detailed list of projects having significant effects on the environment and further specifies the factors to be taken into account for an environmental impact assessment.

Order on Radioactive Releases into the Air and Water in Connection with the Use of Atomic Energy (2001)

Order No. 15/2001 was adopted on 6 June 2001 by the Minister of Environmental Protection. It provides for protection and monitoring of the atmosphere and bodies of water in respect of releases of radioactive materials during atomic energy applications.

The Order sets out the release limits, planned release levels, planning requirements and operational requirements concerning radioactive releases and monitoring of the environment. It establishes special rules for protection of waters and water-containing formations against radioactive contamination and heat pollution, inspection of radioactive releases and environmental protection. The National Inspectorate for Environment and Nature Conservation takes part in the licensing procedure.

Latvia

To implement the 2000 Act on Nuclear Safety and Radiation Safety (see *Nuclear Law Bulletin* No. 67; the text of this Act is reproduced in the *Supplement* to this Bulletin), the Cabinet of Ministers approved a number of regulations covering all major aspects of radiation safety and nuclear safety. In addition to those mentioned in a previous issue of the *Bulletin* (see *Nuclear Law Bulletin* No. 69), the following regulations complete the implementation of the Act:

Organisation and Structure

Regulations on the Statute of the Radiation Safety Board (2001)

Under these Regulations No. 132 issued on 20 March 2001, the Radiation Safety Board is an advisory institution which consults with State authorities, local governments and other bodies regarding issues related to radiation safety and nuclear safety, and which promotes co-operation among different institutions in order to strengthen radiation safety.

The Board is primarily responsible for:

- providing an opinion to the Ministry of Environmental Protection and Regional Development on proposals from various authorities and entities regarding membership and co-operation with different international organisations;

- examining legal documents drafted by the Radiation Safety Centre (RDC) before submission to the Ministry of Environmental Protection and Regional Development.

The Board is comprised of representatives from the following entities: Ministry of Environmental Protection and Regional Development, Ministry of Defence, Ministry of Internal Affairs, Ministry of Welfare, Ministry of Transport, Constitution Protection Bureau, the RDC, the University of Latvia or Riga Technical University and Association of Roentgenology and Radiology.

Radiation protection

Regulations on Activities Involving Ionising Radiation Sources, which do not Require a Special Permit (Licence) or Permit (2001)

These Regulations No. 288, issued on 3 July 2001, govern exemptions from licensing requirements. The main numeric values are in compliance with those found in IAEA Basic Safety Standards and 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 (see *Nuclear Law Bulletin* No. 58). The Regulations also set out criteria for exemption of practices involving thorium-containing welding electrodes and smoke detectors, or consumer and technical products containing naturally-occurring radioactive materials.

Regulations on the State Duty for the Issue of a Special Permit (Licence) or Permit for Activities Involving Ionising Radiation Sources (2001)

These Regulations No. 289, issued on 3 July 2001, define four groups of radiation sources according to radioactivity and/or dose rate:

- the first group is for sources of state significance (nuclear facilities, radioactive waste disposal sites and facilities where total radioactivity exceeds by one billion times the exemption levels);
- the second group comprises sources with radioactivity of 10^6-10^9 above exemption levels or which have a dose rate higher than 10 Sv/h at a one-metre distance;
- the third group covers sources with radioactivity of 10^3-10^6 above exemption levels or which have a dose rate higher than 0.1-10 Sv/h;
- the last group comprises sources with radioactivity of up to 10^3 above exemption levels or which have a dose rate up to 0.1 Sv/h.

Regulations on the Criteria Necessary to Obtain a Special Permit (Licence) or Permit for Activities Involving Ionising Radiation Sources (2001)

These Regulations No. 290 of 3 July 2001 set out criteria to be fulfilled by applicants for a licence or permit for activities involving ionising radiation sources.

Under the Regulations, a legal entity is entitled to apply for a licence and a physical person for a permit for certain sources with very low activity. Permanent representation offices (branches, departments) of foreign undertakings may also apply for a licence for practices involving sources of ionising radiation if such companies are registered as independent taxpayers and are enrolled on the Enterprise Register of the Republic of Latvia.

To obtain a special permit (licence) or a permit for practices involving ionising radiation sources, the applicant shall:

- reduce to a minimum threats to the life or health of employees or third parties related to the manufacture and use of ionising radiation sources;
- obtain adequate measuring instruments for radiation safety and nuclear safety;
- be prepared for radiation accidents;
- ensure that the qualifications of employees and the Job Manager conform to the duties to be performed;
- develop a quality assurance programme and quality control programme;
- establish an adequate environmental monitoring programme.

The Regulations further specify the required educational and professional qualifications for the Job Manager and the employees who perform activities involving ionising radiation sources.

Regulations on the Procedure for the Issue of a Special Permit (Licence) or Permit for Activities Involving Ionising Radiation Sources and Procedure for Public Debate on the Establishment of Ionising Radiation Facilities of State Significance or on Essential Modifications thereto (2001)

These Regulations No. 301, issued on 3 July 2001, comprise several chapters governing all safety aspects:

- general requirements, including also the term of validity for licences;
- basic list of documents which shall accompany an application for a licence or its renewal;
- procedures within the Radiation Safety Centre (RDC) and the Licensing Commission to examine applications;
- requirements for applications to carry out practices at facilities of state significance where there are no essential modifications;
- procedure for public debate on the establishment of ionising radiation facilities of state significance or on essential modifications thereto;
- information to be included in the licence;
- issue of the licence.

Regulations No. 301 also contain annexes empowering the RDC to licence practices involving dual-use equipment, materials and technologies – the lists are from the Nuclear Supplier Group lists and relevant EU regulations, e.g. Council Regulation (EC) No. 1334/2000 of 22 June 2000 setting up a Community regime for the control of exports of dual-use items and technology.

Regulations on the Procedure for Control and Accounting of Exposure of Workers (2001)

These Regulations No. 454, issued on 23 October 2001, are based on Council Directive 90/641/Euratom of 4 December 1990 on the operational protection of outside workers exposed to the risk of ionising radiation during their activities in controlled areas (see *Nuclear Law Bulletin* No. 47) and introduce dose passports and centralised thermo-luminescent-dosimetry (TLD) services by the Radiation Safety Centre (RDC).

The Regulations comprise six chapters, providing for individual monitoring of staff exposure (including dose passports), monitoring of the workplace, monitoring in the event of a radiological incident and assessment of occupational exposure.

Regulations on Medical Contraindications for Practices Involving Ionising Radiation Sources (2001)

These Regulations No. 538, issued on 28 December 2001, provide basic requirements for medical examinations. They establish criteria to use during medical examinations according to which physicians should decide whether or not a person is fit to carry out activities as a radiation worker.

Regulations on the Procedure for the Dismantling of Ionising Radiation Equipment which does not Contain Radioactive Substances (2002)

These Regulations No. 5 were issued on 3 January 2002. They establish requirements governing the dismantling of x-ray apparatus and the manner in which they should be struck from the source register after dismantling.

Regulations on Protection Against Ionising Radiation (2002)

These Regulations No. 149 were issued on 9 April 2002. They establish national Basic Safety Standards (BSS), based upon IAEA Basic Safety Standards and 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 resulting from ionising radiation (see *Nuclear Law Bulletin* No. 58). The main modifications to the Regulations on the Issuance of Licences and Permits for Activities with Radioactive Substances and Other Ionising Radiation Sources adopted on 20 June 1996 (see *Nuclear Law Bulletin* Nos. 57 and 59) are related to the new regulatory system, the partial exclusion of requirements for emergency preparedness due to ongoing activities to adopt separate regulations on this subject, which should be in force at the end of 2002, and the amendment of the national BSS with regard to radioactive contamination in food and foodstuffs, which were regulated in the past by two separate regulations. There are also some additional provisions in respect of naturally-occurring radioactive materials (in building materials and for protection against radon).

The Regulations consist of ten chapters:

- General provisions: scope, exclusions, prohibitions and regulatory infrastructure;
- Radiation safety and nuclear safety measures, including basic obligations for operators;
- Dose calculations;
- Dose limits;
- Protection of workers, apprentices and students against radiation: estimation of potential exposure, area classification and demarcation, health care and protective measures;
- Radiation safety and nuclear safety requirements for ionising radiation sources, including their manufacture, operation and maintenance;
- Protection of the population against ionising radiation;
- Protection against natural sources of ionising radiation in buildings, the workplace, water and construction materials;
- Protection against artificial sources of ionising radiation in buildings, water, air, food products and animal feeding products;
- Protective measures to reduce exposure.

Regime of Radioactive Materials (including Physical Protection)

Regulations on the Procedure Governing Activities Involving Nuclear Materials, Related Materials and Equipment (2002)

These Regulations No. 347 were issued on 24 September 2002. They establish a State System of Accounting for and Control of Nuclear Materials (SSAC) and implement the Additional Protocol to the Safeguards Agreement between the Republic of Latvia and the IAEA in connection with the Treaty on the Non-Proliferation of Nuclear Weapons (INFCIRC/434/Add.1).

Radioactive Waste Management

Regulations on Practices Involving Radioactive Waste and Related Materials (2002)

These Regulations No. 129 were issued on 19 March 2002. They repeal and replace the Regulations on Radioactive Waste Management adopted on 3 August 1999 (see *Nuclear Law Bulletin* No. 64), in order to take into account the establishment of the new regulatory authority, i.e. the Radiation Safety Centre (RDC), and to incorporate some specific recommendations received during the safety studies carried out by CASSIOPEE[18] relating to improvements in waste characterisation, waste acceptance criteria for spent sealed sources and final sealing of a repository.

Regulations on Generic Principles for Exchange of Radioactive Waste (2002)

These Regulations No. 157 were issued on 16 April 2002. They set out basic principles which provide that exchanges of radioactive waste must be of benefit, in terms of safety and radiation protection, to both the sending country and the receiving country and must be approved by the competent authorities of both States. Furthermore, the exchange operations must comply with Community and national provisions governing radioactive waste management and with international agreements on this subject (e.g. the 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management and the Fourth ACP-EEC Convention[19]).

To determine whether the exchange is of benefit to the countries concerned, a number of factors should be considered, including the risk to the public and the environment, and costs related to the management, storage and disposal of such waste.

18. A European Economic Interest Grouping, which was founded by six waste management agencies of European Union States: ANDRA of France; COVRA of the Netherlands; DBE of Germany; ENRESA of Spain; ONDRAF/NIRAS of Belgium; and UK NIREX of the United Kingdom.

19. Fourth Africa, Caribbean Islands and Pacific Ocean – European Economic Community (EEC) Convention signed at Lomé, Togo, on 15 December 1989.

Transport of Radioactive Materials

Regulations on Protection Against Ionising Radiation During the Transport of Radioactive Materials (2001)

These Regulations No. 307 were issued on 3 July 2001. They repeal and replace the Regulations on the Safe Transport of Radioactive Materials adopted on 28 July 1998 (see *Nuclear Law Bulletin* No. 62). The Regulations are fully based on the IAEA Regulations for the Safe Transport of Radioactive Material.

Regulations on the Procedure for Packaging and Marking of Ionising Radiation Sources (2001)

These Regulations No. 406 were issued on 18 September 2001. They establish requirements in relation to the packaging and marking of sealed and unsealed radiation sources and radiation apparatus.

Regulations on Radiometric Control of Cargo and Goods on the State Border (2002)

These Regulations No. 260 were issued on 25 June 2002. They provide for the detection by border guards, and the identification, investigation and assessment by the Radiation Safety Centre (RDC) of unknown ionising radiation sources on national territory, or discovered at the border.

Portugal

Organisation and Structure

Resolution Establishing the National Authority for the Comprehensive Nuclear-Test-Ban Treaty (2001)

Resolution No. 102/01, adopted on 29 August 2001, establishes the National Authority for the Comprehensive Nuclear-Test-Ban Treaty of 1996 (see *Nuclear Law Bulletin* No. 58). The National Authority is composed of five members (the President, two delegates from the Ministry of Finance, one delegate from the Ministry for the Environment and one Azores Regional Government delegate).

Radiation Protection

Decree-Law on the Protection of the Population against the Dangers of Ionising Radiation (2002)

Decree-Law No. 162/02 was adopted on 17 July 2002 and aims to implement Council Directive 96/29/Euratom of 13 May 1996 laying down the basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation (see *Nuclear Law Bulletin* No. 58). It sets out the basic principles governing radiation protection and describes the powers and duties of the different authorities involved in this field.

The General Directorate of Health is responsible for issuing licences for installations and equipment producing ionising radiation and the General Directorate of Energy is empowered to issue licences for nuclear fuel cycle installations. The Regional Health Authorities conduct inspections and control radiological installations.

This Decree-Law applies to all practices involving natural or artificial ionising radiation sources. It incorporates the principles of justification, dose limitation and the ALARA principle in respect of exposure and provides for the notification of any practice involving ionising radiation.

Decree-Law on Protection Against Ionising Radiation in Relation to Medical Exposure (2002)

This Decree-Law No. 180/02 was adopted on 8 August 2002 and aims to implement Council Directive 97/43/Euratom of 30 June 1997 on health protection of individuals against the dangers of ionising radiation in relation to medical exposure (see *Nuclear Law Bulletin* No. 60).

This Decree-Law sets out conditions governing the control and inspection of radiological equipment and installations and the duties and responsibilities of the owner and personnel of medical facilities.

Transport of Radioactive Materials

Decree-Law on the Transport of Dangerous Goods by Road (2000)

This Decree-Law No. 76/00, adopted on 9 May 2000, modifies Decree-Law No. 77/97 of 5 April 1997. It aims to implement Commission Directive 99/47/EC of 21 May 1999 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by road and Council Directive 96/35/EC of 3 June 1996 on the appointment and vocational qualification of safety advisers for the transport of dangerous goods by road, rail and inland waterway.

The Decree-Law responds to the need to establish conditions governing the professional training and qualifications of dangerous goods vehicle drivers. It establishes the competence of the General Directorate of Land Transport to control the qualifications of transportation professionals. The General Directorate of Traffic has competence to evaluate the technical condition of vehicles, traffic conditions and road security.

Decree-Law on the Transport of Dangerous Goods by Sea (2000)

This Decree-Law No. 169/00, adopted on 8 August 2000, modifies Decree-Law No. 94/96 and aims to implement Council Directive 93/75/EEC of 13 September 1993 concerning minimum requirements for vessels bound for or leaving Community ports and carrying dangerous or polluting goods (see *Nuclear Law Bulletin* No. 62).

Decree-Law on the Transport of Dangerous Goods by Rail (2000)

This Decree-Law No. 227-C/2000, adopted on 22 September 2000, aims to implement Council Directive 96/49/EC of 23 July 1996 and Commission Directives 96/87/EC of 13 December 1996 and

1999/48/EC of 21 May 1999 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by rail.

It applies to all activities involving the transport of dangerous goods or waste by rail taking place totally or partially on national territory. This includes all loading and unloading operations and also transfer to another type of vehicle or breaks due to transport conditions. The National Institute of Rail Transport is responsible for enforcing these rules.

Food Irradiation

Decree-Law on the Treatment of Food by Ionising Radiation (2001)

This Decree-Law No. 337/01, adopted on 26 December 2001, aims to implement Directive 1999/2/EC of 22 February 1999 of the European Parliament and of the Council on the approximation of the laws of the Member States concerning foods and food ingredients treated with ionising radiation and Directive 1999/3/EC of 22 February 1999 of the European Parliament and of the Council on the establishment of a community list of foods and food ingredients treated with ionising radiation (see *Nuclear Law Bulletin* No. 67). It applies to the manufacture, trade and import of food and food ingredients treated with ionising radiation.

The Decree-Law establishes the conditions which must be fulfilled for authorisation of the treatment of foodstuffs with ionising radiation. It also establishes conditions governing the import of foods and food ingredients from third countries.

The General Directorate of Health has competence to approve the design and operation of installations where such treatment takes place. It is obliged to retain records for several years on each used radiation source, and on the nature and quantity of irradiated food and food ingredients.

Russian Federation

Organisation and Structure

New Statute of the Russian Federal Agency for Nuclear and Radiation Safety (Gosatomnadzor) (2002)

On 22 April 2002, the Government of the Russian Federation issued Decree No. 265 approving the Regulation on the Russian Federal Agency for Nuclear and Radiation Safety (*Gosatomnadzor*). This Regulation sets out the new Statute of this Agency.

As a nuclear regulatory authority, the Agency is responsible for implementing the federal regulation of nuclear and radiation safety in the use of atomic energy for peaceful and defence purposes, and establishing conditions for the protection of the work force in facilities using atomic energy, for protection of the population and the surrounding environment from inadmissible levels of radiation, and for the prevention of uncontrolled dissemination and utilisation of nuclear materials.

The Agency is entrusted with the following tasks:

- to develop legislation on nuclear safety, radiation protection, physical protection and radioactive waste management;
- to issue licences to carry out nuclear-related activities and permits to workers involved in these activities;
- to monitor safety in the use of atomic energy, nuclear materials, and radioactive materials, and in the handling of nuclear and radioactive materials and radioactive waste;
- to conduct scientific research;
- to establish appropriate systems for the prevention of any violations including terrorist acts on nuclear facilities;
- to implement international obligations to ensure nuclear and radiation safety;
- to inform state agencies and the public about changes in nuclear and radiation safety in respect of nuclear devices, sources of radiation, and storage sites.

To fulfil its functions, the Agency has the right, *inter alia*:

- to conduct inspections and obtain the necessary documents and evidence for this purpose;
- to refuse, suspend or cancel a licence;
- to impose fines on organisations engaging in atomic energy activities without a licence or in breach of the licence conditions.

Any legal acts or regulations adopted by the Agency can be appealed in court.

The Agency is headed by a Director and Deputy Directors all appointed by the Government. A College is formed within the Agency comprised of the Director, Deputy Directors, other directors of structural subdivisions of the Agency, and other members nominated by the Government upon recommendation of the Director. The College examines the most important issues affecting the activities of the Agency and makes appropriate decisions.

To achieve its purposes, the Agency may establish scientific-technical or scientific-consultative, methodological and experimental councils. The status of the councils and their composition are established by the Director.

The Scientific-Technological Centre for Nuclear and Radiation Safety is under the direction of the Agency.

Slovak Republic

Since the description of the first implementing decrees and regulations of the 1998 Law on the Peaceful Use of Nuclear Energy (see *Nuclear Law Bulletin* No. 66), the Nuclear Regulatory Authority (ÚJD) has issued new decrees described below.

Regime of Nuclear Installations

Decree on Requirements on Quality Systems of the Licensees and on Alteration and Amendment of the Decree on the Qualifications of Personnel of Nuclear Installations (2002)

Decree No. 317 on requirements on quality systems of the licensees and on alteration and amendment of Decree No. 187 on the Qualifications of Personnel of Nuclear Installations (see *Nuclear Law Bulletin* No. 66) was issued by the Nuclear Regulatory Authority on 17 April 2002 and came into force on 1 July 2002.

This Decree describes the quality systems to be established by licence-holders for the siting, design, construction, commissioning, operation and decommissioning of nuclear installations, as well as criteria to be fulfilled by licensees. In addition, the Decree establishes criteria for the categorisation of items important for nuclear safety.

Decree on the Safety Documentation of Nuclear Installations and on Alteration and Amendment of the Decree on Emergency Planning in the Event of a Nuclear Incident or Accident (2002)

This Decree No. 318 was issued on 17 April 2002 by the Nuclear Regulatory Authority and entered into force on 1 July 2002.

Chapter I of this Decree specifies the safety documentation to be submitted when applying for a licence for the construction (Sections 2-11), commissioning (Sections 12-25), and the operation or extension of the lifetime (Sections 26-28) of a nuclear installation.

Chapter II amends Decree No. 245 on Emergency Planning in the Event of a Nuclear Incident or Accident (see *Nuclear Law Bulletin* No. 66), which now provides for a preliminary on-site emergency plan for nuclear installations in addition to the on-site and off-site emergency plans and the emergency transport procedure.

Regime of Nuclear Materials (including Physical Protection)

Decree Issuing the List of Special Materials and Equipment (1999)

Decree No. 29/1999 of the Nuclear Regulatory Authority entered into force on 1 March 1999. Enacted pursuant to Section 9(4) of the 1998 Law on the Peaceful Use of Nuclear Energy (see *Nuclear Law Bulletin* Nos. 60 and 61; the text of this Law is reproduced in the Supplement to *Bulletin* No. 62), it sets out the list of special materials and equipment especially designed or produced for use in the manufacture and processing of nuclear material and the list of special dual-use materials and equipment.

Third Party Liability

Decree Establishing the Maximum Limits for Quantities of Nuclear Material Below Which Nuclear Damage is not Expected to be Caused (1999)

Decree No. 30/1999 of the Nuclear Regulatory Authority entered into force on 1 March 1999. This Decree, enacted pursuant to Section 30(3) of the 1998 Law on the Peaceful Use of Nuclear Energy (see *Nuclear Law Bulletin* Nos. 60 and 61; the text of this Law is reproduced in the Supplement to *Bulletin* No. 62), lays down the maximum limits of quantities of nuclear material below which nuclear damage is not expected to be caused. Nuclear accidents caused by quantities of nuclear material lower than these thresholds are therefore excluded from the financial cover for liability for nuclear damage.

Slovenia

General Legislation

Act on Protection Against Ionising Radiation and Nuclear Safety (2002)

On 11 July 2002, the Parliament of the Republic of Slovenia adopted a new Act on Protection against Ionising Radiation and Nuclear Safety (Off. Gaz. RS, 67/2002), which entered into force on 1 October 2002.

The new Act consists of the following 16 main chapters, which are further divided into sub-chapters:

- General provisions (scope, definitions, basic principles in the field of nuclear and radiation safety);
- Practices involving ionising radiation (the obligation to report an intention to carry out practices involving radiation or to use a radiation source, carrying out of practices involving radiation, the use of radiation sources);
- Protection of people against ionising radiation (justification, dose limits, protection of exposed workers, medical exposure);
- Radiation and nuclear safety (the classification of facilities, in terms of radiation and nuclear safety; use of land, construction and carrying out of construction and mining activities; trial and actual operation of radiation and nuclear facilities; radioactive contamination; radioactive waste and spent fuel management; import, export and transit of nuclear and radioactive substances and radioactive waste; intervention measures);
- Licensing (issue, renewal, modification, withdrawal or expiry of a licence);
- Physical protection of nuclear substances and nuclear facilities;
- Non-proliferation of nuclear weapons and safeguards;

- Monitoring and control;
- Emergency planning;
- Reports on protection against ionising radiation and on nuclear safety;
- Records containing information on radiation sources and practices involving radiation;
- Financing of protection against ionising radiation and of nuclear safety (regular and irregular costs incurred by the user of a radiation source, public expenses);
- Compensation for the limited use of land due to a nuclear facility;
- Administrative tasks and inspection;
- Penal provisions; and
- Transitional and final provisions.

Amongst the main achievements of this new legislation are, *inter alia*, a clear division of the costs of implementing the Act between the State and licence-holders; a clearer definition of the licensing procedure; and inclusion of basic principles in this field such as the primary responsibility of licence-holders, the principle of peaceful uses, the polluter-pays principle, the justification principle, principle of optimisation etc. It also provides for the authorisation of qualified experts for radiation and nuclear safety, and ensures transparency and accountability in the fields covered by the Act. Furthermore, this legislation takes account of the existing body of EU law in the field of radiation and nuclear safety and of the international agreements to which Slovenia is a party.

The text of this legislation will be published in the Supplement to the next issue of the *Nuclear Law Bulletin.*

INTERNATIONAL REGULATORY ACTIVITIES

International Atomic Energy Agency

Resolutions adopted by the IAEA General Conference (2002)[1]

The 46th Session of the IAEA General Conference was held in Vienna from 16 to 20 September 2002 with the participation of delegations from 134 Member States and representatives of various international organisations. Resolutions were adopted by the Conference, *inter alia,* in the following areas.

Nuclear, Radiation, Transport and Waste Safety

Under Resolution No. 9 on Measures to Strengthen International Co-operation in Nuclear, Radiation, Transport and Waste Safety, the General Conference notes with satisfaction that the Second Review Meeting of the Contracting Parties to the Convention on Nuclear Safety came to the conclusion that significant progress had been made since the First Review Meeting in the areas of legislation; regulatory independence; financial resources for regulators and operators; implementation of safety improvements in installations built to earlier standards; and emergency preparedness. It appeals to all Member States which have not yet become party to this Convention and to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management to do so in a timely manner. The General Conference also welcomes the work done during 2002 to strengthen the Code of Conduct on the Safety and Security of Radioactive Sources, and notes that a draft revised Code is expected to be put to the Board of Governors during 2003.

Regarding transport safety, the General Conference urges Member States to participate in the 2003 International Conference on the Safety of Transport of Radioactive Material, scheduled from 7 to 11 July 2003 in Vienna. It further welcomes the fact that implementation of the 1996 edition of the Agency's Transport Regulations became mandatory on 1 January 2002 under the International Maritime Organisation's Dangerous Goods Code, having already become mandatory on 1 July 2001 in respect of air shipments of radioactive materials under the International Civil Aviation Organisation's Technical Instructions for the Safe Transport of Dangerous Goods by Air. It expresses satisfaction with the progress that has been made in establishing a schedule for regular reviews of the Agency's Transport Regulations with a view to issuing a revised or amended edition, as necessary, every two years, beginning in 2003, consistent with the schedules of the United Nations Committee of Experts on the Transport of Dangerous Goods and of the relevant international model organisations. It furthermore welcomes the agreement reached in February 2002 on revising the Paris Convention on

1. The texts of these Resolutions are available on the web site of the IAEA at www.iaea.org/worldatom/About/Policy/GC/GC46/Resolutions/

Third Party Liability in the Field of Nuclear Energy and urges States Parties to ratify the revised text of the Convention at the earliest opportunity, and stresses the importance of wide adherence to the international nuclear liability regime established by the Vienna Convention on Civil Liability for Nuclear Damage, as amended in 1997.

With regard to the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, the General Conference notes with concern that nuclear and radiological incidents and accidents have occurred in different parts of the world in recent years, and the number of orphan sources reported and the possibility of radioactive substances being used with malicious intent. It also encourages Member States to implement, if necessary, instruments for improving their own preparedness and response capabilities for nuclear and radiological incidents and accidents, including their arrangements for responding to acts involving the malicious use of nuclear or radioactive material .

Strengthening the IAEA's Safeguards System

In Resolution No. 12, the General Conference welcomes the fact that as of 20 September 2002, 68 States and other Parties to IAEA safeguards agreements have signed Additional Protocols aimed at strengthening the effectiveness and improving the efficiency of the safeguards system. It requests States and other Parties to the agreements which have not yet done so to sign Additional Protocols promptly, and invites the signatories of these Protocols to implement them.

Nuclear Security – Progress on Measures to Protect against Nuclear Terrorism

The General Conference also adopted Resolution No. 13 which focuses on the need to devote attention to the potential implications of terrorist acts for the security of nuclear materials and facilities and other radioactive materials, emphasising the importance of further upgrading physical protection, measures against illicit trafficking and national control systems to ensure protection against nuclear terrorism. It calls upon Member States to continue to provide political, financial and technical support, including in-kind contributions, for this purpose, and to provide to the Nuclear Security Fund the political and financial support it needs. It furthermore calls for early finalisation of negotiations on an amendment to strengthen the Convention on the Physical Protection of Nuclear Material (see *infra*).

Safeguards in the Democratic People's Republic of Korea (DPRK)

The IAEA remains unable to verify fully the DPRK's initial declaration of its nuclear programme. Resolution No. 14 expresses hope that ongoing political developments in Northeast Asia will contribute to progress, and urges the DPRK to take all steps that the IAEA deems necessary to verify the correctness and completeness of that declaration.

Nuclear Inspections in Iraq

In Resolution No. 15, the General Conference urges Iraq to comply with United Nations Security Council resolutions and provide "immediate, unconditional, and unrestricted access" to enable IAEA inspectors to carry out their mandate. It stresses that the IAEA must, on return to Iraq, resolve the key issue of whether Iraq's nuclear activities and capabilities have changed since December 1998, when inspections in Iraq were interrupted.

Application of IAEA Safeguards in the Middle East

Resolution No. 16 reaffirms the urgent need for all States in the Middle East to forthwith accept the application of full-scope IAEA safeguards to all their nuclear activities as an important confidence-building measure among all Sates in the region and as a step in enhancing peace and security in the context of the establishment of a nuclear-weapon-free zone (NWFZ). In this respect, it calls upon all States concerned to take the practical and appropriate steps required for establishment of such a NWFZ in the region and to adhere to international non-proliferation regimes, including the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), as a means of complementing participation in a zone free of all weapons of mass destruction in the Middle East and of strengthening peace and security in the region.

Implementation of the Revised Action Plan (RAP) for the Safety and Security of Radiation Sources[2]

In September 2001, in Resolution No. 10, the 45th IAEA General Conference endorsed a decision of the Board of Governors to request the Secretariat to implement the Revised Action Plan (RAP) for the Safety and Security of Radiation Sources. The Board decision was taken on 10 September 2001, the day before the 11 September terrorist attacks on the United States of America, attacks which – within the Agency – led to a stronger focus on protection against nuclear terrorism. Implementation of the RAP is therefore taking place in conjunction with efforts to strengthen the Agency work relevant to preventing acts of nuclear terrorism as described under Resolution No. 13 *supra*.

The RAP sets out actions to be taken in seven areas:

- regulatory infrastructure;
- source management and control, including the management of disused sources;
- categorisation of sources;
- response to abnormal events;
- information exchange;
- education and training;
- international undertakings.

In September 2002, in Resolution No. 9, the 46th General Conference welcomes the progress towards implementing the RAP.

Regarding regulatory infrastructure, it is expected that the final draft of the Safety Guide on the Protection and Safety of Radiation Sources in Medicine, Agriculture, Research, Industry and Education will be ready for submission to the Commission on Safety Standards for endorsement during the first half of 2003. Furthermore, activities within the framework of the Model Project for

2. The texts of relevant documents are available on the web site of the IAEA at www.iaea.org/worldatom/About/Policy/GC/GC46/Documents/

upgrading radiation protection infrastructure in Africa, East Asia and the Pacific, Europe, Latin America and West Asia have continued.

Regarding source management and control, the final draft of a Safety Guide on the Safety and Security of Radiation Sources was to be submitted to the members of the Radiation Safety Standards Committee (RASSC) in September 2002 for consideration at a subsequent RASSC meeting.

Regarding response to abnormal events, a technical document on national strategies for the detection and location of orphan sources and their subsequent management, is in final draft form and is due to be published before the end of 2002.

An open-ended meeting of technical experts to consider the effectiveness of the Code of Conduct on the Safety and Security of Radioactive Sources (see the article by Katia Boustany in *Nuclear Law Bulletin* No. 67; the text of the Code of Conduct is reproduced in the chapter "Texts" of the same *Bulletin*) met from 19 to 23 August 2002. The Group made a number of changes addressing security issues in the wake of the events of 11 September 2001, including the addition of a specific objective relating to security and a reference to the need to protect facilities in which sources are managed as well as the sources themselves.

In discussing ways in which broad adherence to the Code could be encouraged, some experts were of the view that the status of the Code should be enhanced so as to enable States to make commitments relating to the implementation of its principles. Other experts felt that the current status of the Code, as a recommendation to Member States, was sufficient. It was agreed that the precise scope of the Code must be clarified in order to make this important decision, and such clarification cannot be made until the current revision of the IAEA Categorisation of Radiation Sources is finalised. The Group recommended therefore that once that revision is finalised, the Director General consider convening a group of technical and legal experts to consider the revision of the scope of the Code, the resolution of outstanding issues and whether, and how, the principles set out in the Code might be made the subject of individual commitments by States.

European Union

Amendment to the legislation implementing the Regulation on imports of agricultural products originating in third countries following the Chernobyl accident (2002)

On 10 September 2002, the European Commission adopted Regulation (EC) No. 1608/2002, amending Regulation (EC) No. 1661/1999 (see *Nuclear Law Bulletin* No. 64). Regulation No. 1661 as amended by Regulation (EC) No. 1621/2001 (see *Nuclear Law Bulletin* No. 69) lays 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, as last amended in 2000 (see *Nuclear Law Bulletin* Nos. 45, 49, 55, 64 and 65).

The 2002 Regulation replaces Annex III of Regulation No. 1661/1999 with an Annex setting out the list of customs offices permitting the declaration of products listed in Annex I for free circulation in the Community.

Regulation setting up a Community regime for the control of exports of dual-use items and technologies (2000)

On 22 June 2000, the Council of the European Union adopted Regulation (EC) No. 1334/2000 setting up a Community regime for the control of exports of dual-use items and technologies. This Regulation repeals Council Regulation (EC) No. 3381/94 of 19 December 1994 on the same subject.

Pursuant to this Regulation, dual-use items shall mean items, including software and technology, which can be used for both civil and military purposes and which can be used for both non-explosive uses and assisting in any way in the manufacture of nuclear weapons or other nuclear explosive devices (Article 2). The export of these goods and technologies (the list of which set out in Annexes I and IV includes certain nuclear materials, equipment and technologies) is subject to authorisation.

Authorisations are granted by the competent authorities of the Member State where the exporter is established. For the export of certain goods or technologies, a Community general export authorisation is required (Article 6 and Annex II). The Regulation sets out procedures and criteria for the delivery of authorisations.

Regulation No. 1334/2000 has been amended by several subsequent Regulations, the most recent of which was Council Regulation (EC) No. 880/2002 of 27 May 2002, amending Annex IV to Regulation No. 1334/2000 in order to remove those goods and technologies whose transfer is no longer required to be controlled.

Council Resolution on the establishment of national systems for surveillance and control of the presence of radioactive materials in the recycling of metallic materials in the Member States (2002)

On 22 April 2002, the Council of the European Union adopted a Resolution inviting Member States to adopt the measures required to establish systems minimising radiological risk in the recycling of metal and prevent, to the extent possible, the presence of radioactive materials.

Considering that the presence of uncontrolled radiation sources or materials contaminated with radio-nuclides of natural or artificial origin has been detected among metallic materials destined for recycling, the Resolution emphasises that this may have serious radiological consequences. The adoption of specific prevention measures in respect of radiological risks is necessary in order to improve national systems for the prevention of radiological risk in the recycling of metallic products, in particular the risk of having radioactive materials being mixed with scrap metals intended for recycling.

AGREEMENTS

BILATERAL AGREEMENTS

Latvia – Lithuania

Agreement on Co-operation in Radiation Safety (2002)

On 19 May 2002, the Radiation Safety Centre of the Republic of Latvia and the Radiation Protection Centre of the Republic of Lithuania signed this Agreement, which entered into force upon signature for a period of five years, which will be automatically extended for another term of five years.

The Agreement focuses on the following activities:

- development of a national legal framework in each country on radiation safety, the supervision and control of radiation sources by the relevant national authorities, and practices involving radiation sources;
- establishment and development of the national registers of radiation sources and occupational exposure of radiation workers;
- development of procedures concerning notification, registration and licensing, validation of practices, and assessment of safety for practices and sources;
- emergency preparedness and response.

Both authorities agreed to exchange information on a regular basis on:

- supervision and control of radiation sources and practices involving radiation sources;
- unknown or previously unidentified sources and practices, including the properties of those sources and details on practices that raise concern from a radiation safety viewpoint or may have an impact on the safety of the population and the environment;
- any accident or incident which occurs in the territory of one of the Parties and which may have consequences in the other country;
- training activities, conferences, workshops, etc.;
- co-operation projects.

Ten years after the entry into force of this Agreement, a meeting shall be convened to decide whether the Agreement shall continue in force indefinitely or whether it shall be extended for an additional fixed period.

Russian Federation – Ukraine

Agreement on Exchange of Information and Co-operation in the Field of Safety Regulation in Respect of the Peaceful Utilisation of Nuclear Energy (2002)

The above Agreement was signed by the State Nuclear Regulatory Committee of Ukraine and the Russian Federal Agency for Nuclear and Radiation Safety (*Gosatomnadzor*) on 15 August 2002 and entered into force on the same date. This Agreement is valid for three years.

It establishes a legal basis for exchange of information and co-operation in the following fields:

- development of regulations and standards of nuclear and radiation safety, guidelines on regulatory activity;
- supervision over nuclear and radiation safety including implementation of sanctions;
- regulation of accountancy and control of nuclear material and physical protection of nuclear material, nuclear facilities, radioactive substances and radiation sources;
- regulation of nuclear and radiation safety during transport of nuclear and radioactive material.

Mechanisms for implementation of this Agreement will be established in Additional Protocols.

Russian Federation – United States

Co-operation on Reduction of Weapons-grade Nuclear Material (2002)

On 24 May 2002, the Presidents of the Russian Federation and the United States agreed to establish a joint experts group under their respective Ministries for Energy to examine means to eliminate more weapons-grade nuclear material.

Both countries have recognised that one important means to prevent nuclear weapons materials from falling into the hands of "hostile nations" or terrorists is to reduce the amount available. Under existing agreements, Russia and the US are committed to reducing the amount of nuclear weapons-grade material, through the elimination of 34 metric tons each of plutonium and through US purchase of 500 metric tons of Russian highly-enriched uranium (HEU) for use in commercial nuclear reactor fuel (see in particular *Nuclear Law Bulletin* No. 66). More than 140 metric tons of highly-enriched uranium has already been delivered under the latter agreements.

It is estimated that these programmes will eliminate enough material for almost 25 000 nuclear weapons. Nevertheless, both Governments agree that they should seek to do more. Therefore, this joint

experts group was established to examine near and long-term means, both bilateral and multilateral, to further reduce inventories of plutonium and HEU.

In its report, the joint experts group identified the following areas for potential further reductions of HEU:

- creation of a strategic reserve in the US from Russian HEU down-blended into low enriched uranium (LEU);
- increase in the rate and quantity of HEU converted to LEU under the Nuclear Material Consolidation and Convention Project;
- use of LEU down-blended from Russian HEU to fuel reactors in western countries;
- use of Russian HEU to fuel selected US research reactors, until cores are converted to LEU;
- in parallel, work on accelerated development of LEU fuel for both Soviet-designed and US-designed research reactors.

The group also identified potential new areas of "near-term co-operation" for military-origin plutonium disposition. These include:

- fabrication of additional MOX fuel for use in Russian reactors, using additional military-origin plutonium in line with the 2000 Agreement related to the Disposal of Weapons-grade Plutonium (see *Nuclear Law Bulletin* No. 66);
- a variation of this scenario that would provide for the possible use of some MOX fuel in Russia and for leasing or exporting of the remainder for use in other countries.

The report has now been forwarded to the Russian and US Presidents. The group will continue to study additional options that could be relevant in the future, taking into account their technical feasibility, impacts on commercial nuclear fuel market industries and required financial resources.

MULTILATERAL AGREEMENTS

Conclusion of the negotiations to revise the Paris and Brussels Conventions (2002)

As was reported in *Nuclear Law Bulletin* No. 60, in April of 1998 the Contracting Parties to the Paris Convention on Third Party Liability in the Field of Nuclear Energy[1] commenced their negotiations to revise that Convention for the first time in almost 20 years. Their principle reasons for doing so were twofold: first, to ensure harmonisation between the Paris Convention and the Vienna Convention on Civil Liability for Nuclear Damage as amended by the 1997 Protocol, a matter of particular importance for Paris Convention States Party to the 1988 Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention,[2] and secondly, to ensure that nothing in the Paris Convention would prevent its Contracting Parties from adhering in the future to the 1997 Convention on Supplementary Compensation for Nuclear Damage (for descriptions of both of these instruments, see *Nuclear Law Bulletin* Nos. 60 and 61).

Some two years later, the 11 Contracting Parties to the Brussels Convention Supplementary to the Paris Convention[3] (the "Brussels Supplementary Convention") undertook to revise that Convention as well, recognising the need to ensure that it continued to provide a significant amount of "supplementary" funding to that called for under the Paris Convention.

In the spring of 2002, the Contracting Parties to both Conventions concluded their negotiations and approved the final texts of two amending protocols. The amendments are essentially designed to ensure that greater financial compensation will be made available to compensate a larger number of victims in respect of a broader range of nuclear damage. Certain modifications also aim to implement several decisions, recommendations or interpretations with respect to the application of the Convention that were made by the Steering Committee of the OECD Nuclear Energy Agency or the OECD Council since the last revision of the Paris Convention.

The most significant improvement to the Paris Convention is the increase in the amounts for which an operator will be liable. By comparison with the current maximum limit of 15 million Special Drawing Rights (SDR),[4] the revised Convention will require that the liability amount be set at not less

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1. As amended by the Additional Protocol of 1964 and the Protocol of 1982. At the time the negotiations began, the 14 Contracting Parties were: Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Turkey and the United Kingdom. On 16 October 2001, the Republic of Slovenia became the 15th Contracting Party to the Convention.

2. The Joint Protocol generally extends to States adhering to it the coverage provided under the Convention to which it is not already a Contracting Party. Thus, where a nuclear incident occurs in a Paris Convention/Joint Protocol State and damage is suffered in a Vienna Convention/Joint Protocol State, victims in the latter State may claim compensation for damage against the liable Paris Convention State operator. The Paris Convention States which have joined the Joint Protocol are: Denmark, Finland, Germany, Italy, the Netherlands, Norway and Sweden.

3. As amended by the Additional Protocol of 1964 and the Protocol of 1982. The 11 Contracting Parties are: Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden and the United Kingdom. The Republic of Slovenia has applied for accession to this Convention.

4. However, a 1990 NEA Steering Committee Recommendation of 20 April 1990 [NE/M(90)1] called upon the Contracting Parties to set the nuclear operator's liability at not less than SDR 150 million.

than 700 million Euros (EUR).[5] In addition, the existing liability amount applicable to incidents arising from low-risk installations and the transport of nuclear substances will increase from SDR 5 million to not less than EUR 70 million and EUR 80 million respectively.

Two other important changes proposed for the Paris Convention are the introduction of a detailed definition of "nuclear damage" and the extension of the Convention's geographical scope of coverage. Under the proposed revision, a nuclear operator will continue to be liable for damage to persons and to property, but will also be liable for certain categories of economic loss, the cost of preventive measures, the cost of measures for reinstating an impaired environment, and other losses resulting from such an impaired environment, at least to the extent determined by the law of the competent court,[6] With regard to geographical scope, nuclear damage will remain compensable if suffered in the territory or maritime zone of a Contracting Party, but it will also be compensated if suffered in a non-Contracting State that is a Party to the Vienna Convention/Joint Protocol, or that has no nuclear installations, or that has legislation in place based on the Convention's principles and affording equivalent reciprocal benefits.

Finally, under the revised Convention, victims will now have 30 years, rather than the current 10, within which to institute their claims for damage in respect of personal injury and loss of life.

Similarly, the most noteworthy improvement to the Brussels Supplementary Convention is the increase in the third tiers of compensation. The existing Convention provides for a first tier of at least SDR 5 million payable by the nuclear operator, a second tier comprising the difference between the first tier and SDR 175 million payable by the State where the liable operator's installation is located, and a third tier of between SDR 175 million and SDR 300 million to be provided by all of the Contracting Parties collectively. Under the proposed amendment, the first tier will rise to at least EUR 700 million, the second tier will comprise the difference between the first tier and EUR 1 200 million and the third tier will consist of up to an additional EUR 300 million, totalling in all EUR 1.5 billion of compensation.

While a number of minor procedural matters still need to be addressed, it is anticipated that the amending protocols for both Conventions should be signed within the next few months.

Negotiations to revise the 1979 Convention on the Physical Protection of Nuclear Materials (2002)[7]

Proposals to give thought to a possible revision of the Convention on the Physical Protection of Nuclear Materials (CPPNM), adopted on 26 October 1979 (the text of this Convention was published in *Nuclear Law Bulletin* No. 24), were put forward several years ago, the aim of the suggested revision being to expand its scope in order to cover domestic use, storage and transit of nuclear materials. The Convention, which entered into force in 1987, only covers the physical protection of such materials during international transport. It was originally based on IAEA document INFCIRC/225 of 1975, containing recommendations on how to prevent the theft or unauthorised diversion of nuclear

5. According to the International Monetary Fund's published currency values in terms of the Special Drawing Right on 2 January 2002, 1 SDR = 1.39732 EUR.

6. This is a reference to the national law of the court having jurisdiction over claims for compensation arising out of a nuclear incident.

7. This Note was kindly provided by Mr. Fabrizio Nocera, Legal Adviser to the ENEA in Italy, who participated in these negotiations.

materials, or sabotage to nuclear facilities. Since its publication, this document had indeed become a standard reference document in the domain of physical protection.

Although inspired by various factors such as technological changes, political adjustments and modifications to national physical protection approaches, the above-mentioned proposals were not very well-received at first, especially by some European countries. On the other hand and in the meantime, INFCIRC/225 had been revised repeatedly, its latest revision having occurred in April 1999 under the reference INFCIRFC/225 Rev. 4. This document, besides improving the clarity of previous recommendations and taking into account improved technology as well as international and national practices, included a very important innovation consisting of specific recommendations relating to sabotage of nuclear facilities and materials. These developments, together with new physical protection problems arising from geo-political changes world-wide and from an ageing Convention, led some countries to reiterate proposals for its revision, in particular with a view to extending its scope of application to cover sabotage and domestic use, storage and transit of nuclear materials.

Following this, the IAEA convened a meeting in 1999 of an expert group, whose terms of reference were to carry out a survey of the current situation regarding physical protection issues and suggest any appropriate actions. The survey was also intended to identify areas which would most benefit from revision, if it was decided to amend the Convention.

One of the main achievements of this group was the identification of fundamental physical protection objectives and principles (O&P), by drawing largely on INFCIRC/225 Rev. 4. A very important feature of such O&P was the so-called "graded approach" in connection with their individual relevance, offering guidance to interested States when setting up or improving national regimes, with a view to taking into account national circumstances and requirements. In addition, it gradually became accepted that the O&P could provide a substantive background for a renewed international instrument on physical protection.

As proof of the importance attached to the above developments, the IAEA Board of Governors, at the General Conference in 2001 and following recommendations by the expert group, took a three-step action plan consisting of (a) the endorsement of the O&P as "Security Fundamentals"; (b) the adoption of a Resolution pursuant to which States committed themselves to strengthen their regimes on the basis of the "Security Fundamentals"; (c) the provision of a mandate to the IAEA Director General to convene a group of legal and technical experts to embark on a CPPNM revision exercise. It should be pointed out that the expert group had agreed on a number of well-defined issues upon which the revision exercise should focus, i.e. international transport, national use, storage and transit of nuclear material, responsibility of States, protection of confidential information, O&P, etc. The revision exercise is not to include other issues such as submission of national reports to the international community, possible obligations in respect of INFCIRC/225, military applications and so on. Although these decisions were made shortly after the terrorist attacks in the United States, which of course played an important role in overcoming any residual hesitations or drawbacks as to the revision exercise as a whole, it should be emphasised that the initial reflections on the need to revise this Convention had commenced well before the 11 September tragedy.

The group of legal and technical experts has been working since December 2001, dealing with many complex and sensitive issues, notably including (a) how to link the O&P, which have the status of recommendations only although they have been adopted as IAEA standards, to a binding instrument such as the Convention; (b) how to formulate the list of offences in connection which States are required to lay down penalties under the Convention; (c) whether and how damage to the environment should be included among such punishable offences; (d) conditions under which a State may not subject nuclear material to a physical protection regime, on account of its nature, quality, quantity,

"attractiveness" (i.e. likelihood of attracting unauthorised acts directed against such material) and other relevant factors; and (e) exchange of information and assistance in the event of sabotage. An agreement in principle has already been found on how to address these last two issues.

With regard to (a), within the group of legal and technical experts, there has always been a basic understanding that States should be allowed a certain flexibility in applying the O&P, in order to take into account their own national situation, essentially as regards the quantity, nature and "attractiveness" of nuclear materials and facilities. Nevertheless, the crucial point is how to stipulate clearly that States are committed to implement the O&P although strictly speaking, they are simply recommendations. The problem with (b) is how to identify and formulate the list of infringements to be considered as punishable offences, bearing in mind the additional difficulty deriving from the inclusion of sabotage within the scope of the revised Convention. Turning to the question of environmental damage under (c), discussions in the group of legal and technical experts show that positions are equally divided, since it is acknowledged by several experts in the group that such damage should be given consideration in the framework of the Convention, which already covers damage to persons and property.

The revision work will be resumed in early 2003, when the group will meet again from 3 to 14 March. This two-week time-span has been agreed upon with a view to finalising the revision, and in the same spirit, intersessional consultations will take place in the meantime amongst the experts of the group.

Status of Conventions in the Field of Nuclear Energy

1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

Since the last update in *Nuclear Law Bulletin* No. 55, ten countries, namely Andorra, Angola, Brazil, Chile, Comoros, Cuba, Djibouti, Oman, United Arab Emirates and Vanuatu, have become Contracting Parties to this Treaty. Therefore, as of 8 November 2002, there are 188 Parties to this Treaty, as set out in the table below.

Status of signatures, ratifications, acceptances, approvals or accessions

State	Date of Signature	Date of Deposit of Instrument
Afghanistan	1 July 1968	4 February 1970 (ratification)
Albania		12 September 1990 (accession)
Algeria		12 January 1995 (accession)
Andorra		7 June 1996 (accession)
Angola		14 October 1996 (accession)
Antigua and Barbuda		17 June 1985 (succession)
Argentina		10 February 1995 (accession)
Armenia		21 June 1993 (accession)
Australia	27 February 1970	23 January 1973 (ratification)
Austria	1 July 1968	27 June 1969 (ratification)

State	Date of Signature	Date of Deposit of Instrument
Azerbaijan		22 September 1992 (accession)
Bahamas		11 August 1976 (succession)
Bahrain		3 November 1988 (accession)
Bangladesh		31 August 1979 (accession)
Barbados	1 July 1968	21 February 1980 (ratification)
Belarus		9 February 1993(accession)
Belgium	20 August 1968	2 May 1975 (ratification)
Belize		9 August 1985 (succession)
Benin	1 July 1968	31 October 1972 (ratification)
Bhutan		23 May 1985 (accession)
Bolivia	1 July 1968	26 May 1970 (ratification)
Bosnia and Herzegovina		15 August 1994 (succession)
Botswana	1 July 1968	28 April 1969 (ratification)
Brazil		18 September 1998 (accession)
Brunei Darussalam		26 March 1985 (accession)
Bulgaria	1 July 1968	5 September 1969 (ratification)
Burkina Faso	11 August 1969	3 March 1970 (ratification)
Burundi		19 March 1971 (accession)
Cambodia		2 June 1972 (accession)
Cameroon	17 July 1968	8 January 1969 (ratification)
Canada	29 July 1968	8 January 1969 (ratification)
Cape Verde		24 October 1979 (accession)
Central African Republic		25 October 1970 (accession)
Chad	1 July 1968	10 March 1971 (ratification)
Chile		25 May 1995 (accession)
China		9 March 1992 (accession)
Colombia	1 July 1968	8 April 1986 (accession)
Comoros		4 October 1995 (accession)
Congo, Democratic Republic of the	22 July 1968	4 August 1970 (ratification)
Congo		23 October 1978 (accession)
Costa Rica	1 July 1968	3 March 1970 (ratification)
Côte d'Ivoire	1 July 1968	6 March 1973 (ratification)
Croatia		29 June 1992 (succession)
Cuba		4 November 2002 (accession)
Cyprus	1 July 1968	10 February 1970 (ratification)

State	Date of Signature	Date of Deposit of Instrument
Czech Republic		1 January 1993 (succession)
Denmark	1 July 1968	3 January 1969 (ratification)
Djibouti		16 October 1996 (accession)
Dominica		10 August 1984 (succession)
Dominican Republic		24 July 1971 (ratification)
Ecuador		7 March 1969 (ratification)
Egypt	1 July 1968	26 February 1981 (ratification)
El Salvador	1 July 1968	11 July 1972 (ratification)
Equatorial Guinea		1 November 1984 (accession)
Eritrea		16 March 1995 (accession)
Estonia		7 January 1992 (accession)
Ethiopia	5 September 1968	5 February 1970 (ratification)
Fiji		29 August 1972 (succession)
Finland	1 July 1968	5 February 1969 (ratification)
France		2 August 1992 (accession)
Gabon		19 February 1974 (accession)
Gambia	4 September 1968	12 May 1975 (ratification)
Georgia		7 March 1994 (accession)
Germany	28 November 1969	2 May 1975 (ratification)
Ghana	1 July 1968	4 May 1970 (ratification)
Greece	1 July 1968	11 March 1970 (ratification)
Grenada		2 September 1975 (succession)
Guatemala	26 July 1968	22 September 1970 (ratification)
Guinea		29 April 1985 (accession)
Guinea-Bissau		20 August 1976 (accession)
Guyana		19 October 1993 (accession)
Haiti	1 July 1968	2 June 1970 (ratification)
Holy See		25 February 1971 (accession)
Honduras	1 July 1968	16 May 1973 (ratification)
Hungary	1 July 1968	27 May 1969 (ratification)
Iceland	1 July 1968	18 July 1969 (ratification)
Indonesia	2 March 1970	12 July 1979 (ratification)
Iran, Islamic Republic of	1 July 1968	2 February 1970 (ratification)
Iraq	1 July 1968	29 October 1969 (ratification)
Ireland	1 July 1968	1 July 1968 (ratification)

State	Date of Signature	Date of Deposit of Instrument
Italy	28 January 1969	2 May 1975 (ratification)
Jamaica	14 April 1969	5 March 1970 (ratification)
Japan	3 February 1970	8 June 1976 (ratification)
Jordan	10 July 1968	11 February 1970 (ratification)
Kazakhstan		14 February 1994 (accession)
Kenya	1 July 1968	11 June 1970 (ratification)
Kiribati		18 April 1985 (succession)
Korea, Democratic People's Republic of		12 December 1985 (accession)
Korea, Republic of	1 July 1968	23 April 1975 (ratification)
Kuwait	15 August 1968	17 November 1989 (ratification)
Kyrgyzstan		5 July 1994 (accession)
Lao People's Democratic Republic	1 July 1968	20 February 1970 (ratification)
Latvia		31 January 1992 (accession)
Lebanon	1 July 1968	15 July 1970 (ratification)
Lesotho	9 July 1968	20 May 1970 (ratification)
Liberia	1 July 1968	5 March 1970 (ratification)
Libyan Arab Jamahiriya	18 July 1968	26 May 1975 (ratification)
Liechtenstein		20 April 1978 (accession)
Lithuania		23 September 1991 (accession)
Luxembourg	14 August 1968	2 May 1975 (ratification)
Macedonia, The former Yugoslav Republic of		30 March 1995 (succession)
Madagascar	22 August 1968	8 October 1970 (ratification)
Malawi		18 February 1986 (accession)
Malaysia	1 July 1968	5 March 1970 (ratification)
Maldives	11 September 1968	7 April 1970 (ratification)
Mali	14 July 1969	10 February 1970 (ratification)
Malta	17 April 1969	6 February 1970 (ratification)
Marshall Islands		30 January 1995 (accession)
Mauritania		26 October 1993 (accession)
Mauritius	1 July 1968	14 April 1969 (ratification)
Mexico	26 July 1968	21 January 1969 (ratification)
Micronesia, Federated States of		14 April 1995 (accession)
Moldova, Republic of		11 October 1994 (accession)

State	Date of Signature	Date of Deposit of Instrument
Monaco		13 March 1995 (accession)
Mongolia	1 July 1968	14 May 1969 (ratification)
Morocco	1 July 1968	27 November 1970 (ratification)
Mozambique		4 September 1990 (accession)
Myanmar		2 December 1992 (accession)
Namibia		2 October 1992 (accession)
Nauru		7 June 1982 (accession)
Nepal	1 July 1968	9 January 1970 (ratification)
Netherlands	20 August 1968	2 May 1975 (ratification)
New Zealand	1 July 1968	10 September 1969 (ratification)
Nicaragua	1 July 1968	6 March 1973 (ratification)
Niger		9 October 1992 (accession)
Nigeria	1 July 1968	27 September 1968 (ratification)
Norway	1 July 1968	5 February 1969 (ratification)
Oman		23 January 1997 (accession)
Palau		14 April 1995 (accession)
Panama	1 July 1968	13 January 1977 (ratification)
Papua New Guinea		16 February 1982 (accession)
Paraguay	1 July 1968	4 February 1970 (ratification)
Peru	1 July 1968	3 March 1970 (ratification)
Philippines	1 July 1968	5 October 1972 (ratification)
Poland	1 July 1968	12 June 1969 (ratification)
Portugal		15 December 1977 (accession)
Qatar		3 April 1989 (accession)
Romania	1 July 1968	4 February 1970 (ratification)
Russian Federation	1 July 1968	5 March 1970 (ratification)
Rwanda		20 May 1975 (accession)
Saint Kitts and Nevis		6 November 1984 (succession)
Saint Lucia		28 December 1979 (succession)
Saint Vincent and the Grenadines		6 November 1984 (succession)
Samoa		17 March 1975 (accession)
San Marino	1 July 1968	10 August 1970 (ratification)
Sao Tome and Principe		20 July 1983 (accession)
Saudi Arabia		3 October 1988 (accession)
Senegal	1 July 1968	17 December 1970 (ratification)

State	Date of Signature	Date of Deposit of Instrument
Seychelles		12 March 1985 (accession)
Sierra Leone		26 February 1975 (accession)
Singapore	5 February 1970	10 March 1976 (ratification)
Slovakia		1 January 1993 (succession)
Slovenia		7 April 1992 (succession)
Solomon Islands		17 June 1981 (succession)
Somalia	1 July 1968	5 March 1970 (ratification)
South Africa		10 July 1991 (accession)
Spain		5 November 1987 (accession)
Sri Lanka	1 July 1968	5 March 1979 (ratification)
Sudan	24 December 1968	31 October 1973 (ratification)
Suriname		30 June 1976 (succession)
Swaziland	24 June 1969	11 December 1969 (ratification)
Sweden	19 August 1968	9 January 1970 (ratification)
Switzerland	27 November 1969	9 March 1977 (ratification)
Syrian Arab Republic	1 July 1968	24 September 1968 (ratification)
Tajikistan		17 January 1994 (accession)
Tanzania, United Republic of		31 May 1991 (accession)
Thailand		7 December 1972 (accession)
Togo	1 July 1968	26 February 1970 (ratification)
Tonga		7 July 1971 (succession)
Trinidad and Tobago	20 August 1968	30 October 1986 (ratification)
Tunisia	1 July 1968	26 February 1970 (ratification)
Turkey	28 January 1969	17 April 1980 (ratification)
Turkmenistan		29 September 1994 (accession)
Tuvalu		19 January 1979 (succession)
Uganda		20 October 1982 (accession)
Ukraine		5 December 1994 (accession)
United Arab Emirates		26 September 1995 (accession)
United Kingdom	1 July 1968	29 November 1968 (ratification)
United States of America	1 July 1968	5 march 1970 (ratification)
Uruguay	1 July 1968	31 August 1970 (ratification)
Uzbekistan		7 May 1992 (accession)
Vanuatu		24 August 1995 (accession)
Venezuela	1 July 1968	25 September 1975 (ratification)

State	Date of Signature	Date of Deposit of Instrument
Viet Nam		14 June 1982 (accession)
Yemen	14 November 1968	14 May 1986 (ratification)
Yugoslavia	10 July 1968	4 March 1970 (ratification)
Zambia		15 May 1991 (accession)
Zimbabwe		26 September 1991 (accession)

1979 Convention on Physical Protection of Nuclear Material

Since the last update in *Nuclear Law Bulletin* No. 69, six states, namely Ghana, Iceland, Latvia, Mali, Morocco and Namibia, have become Contracting Parties to this Convention. Therefore, as of 8 November 2002, there are 81 Parties to this Convention.

1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

Since the last update in *Nuclear Law Bulletin* No. 69, Canada has become a Contracting Party to this Convention. Therefore, as of 8 November 2002, there are 84 Parties to this Convention.

1994 Convention on Nuclear Safety

Since the last update in *Nuclear Law Bulletin* No. 65, Indonesia has become a Contracting Party to this Convention. Therefore, as of 8 November 2002, there are 54 Contracting Parties to this Convention.

1996 Comprehensive Nuclear Test Ban Treaty

Since the last update in *Nuclear Law Bulletin* No. 69, seven counties, namely Botswana, Burkina Faso, Georgia, Kazakhstan, Niger, Samoa, and Venezuela, have become Contracting Parties to this Treaty. Therefore, as of 8 November 2002, there are 97 Parties to this Treaty.

1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

Since the last update in *Nuclear Law Bulletin* No. 69, two countries, namely Belgium and the Republic of Korea, have become Contracting Parties to this Convention. Therefore, as of 8 November 2002, there are 29 Parties to this Convention.

BIBLIOGRAPHY AND NEWS BRIEFS

BIBLIOGRAPHY

OECD Nuclear Energy Agency

Proceedings of the Workshop on the Indemnification of Damage in the Event of a Nuclear Accident, Paris, 2003

The Workshop on the Indemnification of Damage in the Event of a Nuclear Accident, organised by the OECD Nuclear Energy Agency in close co-operation with the French authorities, was held in Paris from 26 to 28 November 2001 (*see Nuclear Law Bulletin* No. 68). This event, which was an integral part of the International Nuclear Emergency Exercise INEX 2000, attracted wide participation from national nuclear authorities, regulators, operators of nuclear installations, nuclear insurers and international organisations. The objective was to test the capacity of the existing nuclear liability and compensation mechanisms in the 29 countries represented at the Workshop to manage the consequences of a nuclear emergency such as the accident simulated at the Gravelines nuclear power plant in the north of France in May 2001, and upon which the INEX 2000 Exercise was based.

The Proceedings of this Workshop will be available in early 2003. This bilingual English-French publication contains a comparative analysis of the legislative and regulatory regime governing emergency response and nuclear third party liability in force in those countries which replied to the questionnaire circulated for this purpose and which participated in the discussions at the Workshop. Included also is a compilation of the responses provided to that questionnaire *in extenso*. The Proceedings reproduce the texts of presentations made by special guests from Germany and Japan describing the manner in which the public authorities in their respective countries responded to two nuclear accidents of a very different nature and scale.

International Nuclear Law Association

Nuclear Inter Jura 2001 Proceedings, Nuclear Law under the Sign of Safety and Confidence, Budapest, 2002, 459 pages

The International Nuclear Law Association (INLA) held its 15th Congress in Budapest, Hungary, from 3 to 8 June 2001. The reports presented before the Congress by experts from over 20 countries and international organisations have recently been published by the Association in the form of Proceedings. They reproduce the documents related to the six Working Groups, namely

Reactor Safety and Radiation Protection; Radiological Protection; Nuclear Liability and Insurance; Nuclear Waste Management; International Nuclear Trade and Radioisotopes. A special session was devoted to the accession of the Central and Eastern European States to the European Union. These Proceedings can be ordered from INLA Headquarters, Square de Meeûs 29, 1000 Brussels (Belgium).

Denmark

Radioactive Waste Disposal at Sea – Public Ideas, Transnational Policy Entrepreneurs, and Environmental Regimes, by Lasse Ringius, published by MIT Press, Cambridge, United States, 2001, 261 pages

This book, published by a Danish academic, studies the context in which, under the active influence of environmental non governmental organisations, practices involving the disposal of low-level solid radioactive waste at sea were contested and then made subject to a moratorium, leading finally to a general ban. Since 1972, the release of radioactive waste into the sea is governed essentially by the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (see *Nuclear Law Bulletin* Nos. 17, 28, 36 and 53). The author recalls the practices of radioactive waste disposal at sea, the origin of the conditional licensing regime of the London Convention and the inception and development of the movement opposed to such releases which prevailed in the end over the interests of countries performing such releases and despite the absence of scientific proof in respect of perceived dangers for the marine environment resulting from these practices.

NEWS BRIEFS

OECD Nuclear Energy Agency

Accession of the Slovak Republic

On 13 June 2002, the OECD Council approved the membership of the Slovak Republic in the OECD Nuclear Energy Agency (NEA) and its Data Bank. The Slovak Republic had become a Member of the OECD on 14 December 2000. This approval brings the membership of the NEA to 28.

The Slovak Republic's six nuclear power units, equipped with VVER-440 reactors, presently provide about 53% of the country's electricity. This country has recently adopted nuclear legislation and regulations, and has established an independent nuclear safety and regulatory authority (see *Nuclear Law Bulletin* No. 62 and the *Overview on Nuclear Legislation in Central and Eastern Europe and the NIS*, published by the NEA in 2000). It has nuclear research and training facilities, as well as active programmes in the radioactive waste management field.

After the accession of the Czech Republic and Hungary, the Slovak Republic is the third country from Central Europe to join the Agency.

2002 Session of the International School of Nuclear Law

The second Session of the International School of Nuclear Law (ISNL), a teaching programme jointly organised by the OECD Nuclear Energy Agency (NEA) and the University of Montpellier 1, France, took place from 26 August to 7 September 2002 in Montpellier. The International Nuclear Law Association, the European Commission and the International Atomic Energy Agency also extended their patronage or support to the organisation of this Session.

The International School of Nuclear Law aims to provide a high quality programme on all aspects of the law governing the peaceful uses of nuclear energy. Classes cater to both law students pursuing their studies at masters or doctoral level who are interested in specialising in this field and to professionals who are already active in the nuclear sector and wish to develop their knowledge.

The 2002 Session brought together 57 participants from 35 countries all over the world. Subjects covered during this Session included *inter alia* the history and origins of nuclear law, radiation protection, nuclear safety and accident prevention, emergency preparedness, spent fuel and radwaste management, transport of nuclear materials and fuel, physical protection, non-proliferation, liability and compensation for nuclear damage.

The 2003 Session of the School will take place in Montpellier from 25 August to 5 September 2003. Further information on the ISNL and its programme, as well as application forms for its 2003 Session are available from the NEA Secretariat, Legal Affairs, 12 boulevard des Îles, 92130 Issy-les-Moulineaux, France, and on the NEA Web site at www.nea.fr/html/law/isnl/index.html.

International Nuclear Law Association

Nuclear Inter Jura 2003

The International Nuclear Law Association (INLA) will hold its 16th congress from 31 March to 3 April 2003 in Cape Town, South Africa. These Congresses, organised on a biennial basis, provide INLA members, along with other interested persons, with an opportunity to review recent developments in nuclear law, thus serving as a forum to discuss legal questions concerning the peaceful uses of nuclear energy.

The Congress will be divided into six sessions based on the following themes of nuclear energy law: licensing and decommissioning; radiological protection; nuclear liability and insurance; waste management; international trade and co-operation; and radioisotopes.

Further information may be obtained from Ms. Rozaan Swanepoel, National Nuclear Regulator, P O Box 7106, Centurion, South Africa, 0046, Tel: +2712 674 7183, Fax: +2712 674 7153, e-mail: inla2003@nnr.co.za or by visiting the INLA Web site at: www.aidn-inla.be

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GERMANY

Act on the Peaceful Utilisation of Atomic Energy and the Protection Against its Hazards (Atomic Energy Act)*

of 23 December 1959 (BGBl. I, p. 814),
as amended and promulgated on 15 July 1985 (BGBl. I, p. 1565),
last amendment by the Act of 22 April 2002 (BGBl. I, p. 1351)**

Chapter 1

GENERAL

Section 1

Purpose of the Act

Adopted: 22 April 2002[1]

The purpose of this Act is:

1. to phase out the use of nuclear energy for the commercial generation of electricity in a structured manner, and to ensure on-going operation up until the date of discontinuation;

2. to protect life, health and property against the hazards of nuclear energy and the detrimental effects of ionising radiation and to provide compensation for damage and injuries caused by nuclear energy or ionising radiation;

3. to prevent danger to the internal or external security of the Federal Republic of Germany from the application or release of nuclear energy;

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* Unofficial translation kindly provided by the German Authorities

** BGBl.: *Bundesgesetzblatt* = Federal Law Gazette of the Federal Republic of Germany

1. The purpose of the date indicated in italics at the beginning of each Section is to identify when it was last amended.

4. to enable the Federal Republic of Germany to meet its international obligations in the field of nuclear energy and radiation protection.

Section 2

Definitions

Adopted: 13 December 2001

(1) The term “radioactive material” (nuclear fuel and other radioactive substances) as used herein shall refer to all material containing one or more radionuclides and whose activity or specific activity in conjunction with nuclear energy or radiation protection cannot be disregarded under the provisions of this Act or a statutory ordinance promulgated on the basis of this Act. The term “nuclear fuel” as used herein shall refer to special fissionable material in the form of

1. ^{239}Pu and ^{241}Pu,

2. uranium enriched in isotopes ^{235}U or ^{233}U,

3. any material containing one or more of the substances cited under points 1 and 2,

4. substances which permit a self-sustaining chain reaction to be maintained in a suitable installation and which are defined in a statutory ordinance;

the term “uranium enriched in isotopes 235 or 233” shall mean uranium containing the isotopes ^{235}U or ^{233}U or both in such quantities that the sum total of the amounts of these two isotopes is greater than the amount of isotope ^{238}U multiplied by the naturally occurring ratio of isotope ^{235}U in relation to isotope ^{238}U.

(2) The activity or specific activity of a substance may be disregarded pursuant to paragraph (1), sentence 1 above provided that, pursuant to a statutory ordinance promulgated on the basis of this Act:

1. it falls below specified exemption levels;

2. if the substance concerned is incurred within the context of a licensable activity under the provisions of this Act or a statutory ordinance promulgated on the basis of this Act, it falls below specified clearance levels and clearance has been given;

3. the substance concerned is of natural origin which is not used because of its radioactivity, as a nuclear fuel or to generate nuclear fuel, and is not subject to monitoring under the provisions of this Act or a statutory ordinance promulgated on the basis of this Act.

Notwithstanding sentence 1 above, a statutory ordinance promulgated on the basis of this Act concerning the use of substances on humans or the appropriated addition of substances to the production of pharmaceuticals, medical products, plant protection products, pesticides, substances referred to in Section 1, paragraphs 1-5 of the Fertilizer Act, or consumer goods or the activation thereof, may stipulate certain cases in which the activity or activity concentration of a substance must not be disregarded.

(3) For the application of licensing provisions pursuant to this Act or any statutory ordinances promulgated on the basis of this Act, substances in which the proportion of isotopes ^{233}U, ^{235}U, ^{239}Pl and ^{241}Pl does not exceed 15 grams in total or the concentration of the isotopes listed does not exceed 15 grams per 100 kilograms shall be classified as "other radioactive material". Sentence 1 above shall not apply to solidified high-level fission product solutions derived from the processing of nuclear fuel.

(4) For the application of the provisions relating to liability and financial security, the terms "nuclear incident", "nuclear installation", "operator of a nuclear installation", "nuclear substances" and "Special Drawing Rights" shall have the meanings defined in Appendix 1 hereto.

(5) The term "Paris Convention" shall mean the convention dated 29 July 1960 relating to third party liability in the field of nuclear energy, as amended and promulgated on 5 February 1976 (BGBl. II, pp. 310, 311), in conjunction with the Protocol of 16 November 1982 (BGBl. 1985 II, p. 690).

(6) The term "Brussels Supplementary Convention" shall mean the convention dated 31 January 1963 supplementary to the Paris Convention, as amended and promulgated on 5 February 1976 (BGBl. II, pp. 310, 318), in conjunction with the Protocol of 16 November 1982 (BGBl. 1985 II, p. 690).

(7) The term "Joint Protocol" shall mean the Joint Protocol of 21 September 1988 Relating to the Application of the Vienna Convention and the Paris Convention (BGBl. 2001 II, pp. 202, 203).

(8) The term "Vienna Convention" shall mean the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage (BGBl. 2001 II, pp. 202, 207), in the respective valid versions for the Parties.

Section 2a

Environmental impact assessment

Adopted: 27 July 2001

(1) If, under the provisions of the Act on Environmental Impact Assessment, there is an obligation to carry out an environmental impact assessment for projects which are subject to licensing or plan approval under the provisions of this Act or a statutory ordinance promulgated on the basis thereof (projects subject to compulsory EIA), the environmental impact assessment shall constitute an integral part of the licensing or plan approval procedures stipulated by this Act or a statutory ordinance promulgated on the basis thereof. The environmental impact assessment should be carried out in accordance with the provisions outlined in Section 7, paragraph (4), sentences 1 and 2, and the statutory ordinance pursuant to Section 7, paragraph (4), sentence 3, on the subject of the environmental impact assessment, the application documents, the announcement of the project and the date for the public hearing, the disclosure of application documents for public inspection, the raising of objections, the involvement of the authorities, the implementation of the public hearing, the content of the licensing permit, and the service and public announcement of the decision; in the case of projects according to Section 7 and Section 9b, subject to compulsory EIA other than the installations listed in Appendix 1 of the

Act on Environmental Impact Assessment, no public hearing shall take place if the project is liable to licensing under the valid provisions for other radioactive substances. Section 2, paragraph (1), sentence 4, and Section 14 of the Act on Environmental Impact Assessment and Section 9b, paragraphs (2) and (5), No. 1, shall remain unaffected by this.

(2) Before filing a complaint to the administrative court concerning an administrative act promulgated subsequent to an environmental impact assessment, the requirement for verification by way of pre-trial review will be waived.

Chapter 2

SUPERVISION

Section 3

Imports and exports

Adopted: 15 July 1985

(1) Any person who imports or exports nuclear fuel shall require a licence.

(2) An import licence shall be granted, provided that:

1. there are no known facts giving rise to doubts as to the reliability of the importer, and

2. it is assured that the nuclear fuel to be imported will be used in conformity with the provisions hereof, the statutory ordinances issued hereunder and the international obligations of the Federal Republic of Germany in the field of nuclear energy.

(3) An export licence shall be granted provided that:

1. there are no known facts giving rise to doubts as to the reliability of the exporter, and

2. it is assured that the nuclear fuel to be exported will not be used in such a way as to jeopardise the international obligations of the Federal Republic of Germany in the field of nuclear energy or the internal or external security of the Federal Republic of Germany.

(4) Nothing herein contained shall affect any other legal provision relating to imports or exports.

(5) Any other conveyance into or out of the territorial scope of this Act shall be deemed to be imports or exports as defined herein.

Section 4

Carriage of nuclear fuel

Adopted: 22 April 2002

(1) The carriage of nuclear fuel outside an enclosed site where nuclear fuel is kept in government custody or where practices licensed pursuant to Sections 6, 7 and 9 hereof are pursued, shall require a licence. Such licence shall be granted to the consignor or the person attending to the consignment or carriage of the nuclear fuel.

(2) A licence shall be granted provided that:

1. there are no known facts giving rise to doubts as to the reliability of the applicant, the carrier and the persons actually effecting the carriage;

2. it is assured that the carriage will be effected by persons who possess the necessary knowledge of the possible radiation hazards and the protective measures to be applied to the intended carriage of nuclear fuel;

3. it is assured that the nuclear fuel will be carried in conformity with such legal provisions on the carriage of dangerous goods as are applicable to the respective carrier or, in the absence of such provisions, that such other precautions have been taken as are necessary in the light of the state of the art in science and technology in order to prevent damage resulting from the carriage of nuclear fuel;

4. the necessary financial security has been provided for covering the legal liability to pay compensation for damage;

5. the necessary protection has been provided against disruptive action or other interference by third parties;

6. the choice of the mode, time and route of carriage will not conflict with overriding public interests;

7. with reference to the carriage of irradiated fuel rods from installations for the fission of nuclear fuel for the commercial generation of electricity to central interim storage facilities pursuant to Section 6, paragraph (1), evidence is showing that there is no possibility of storage at the local interim storage facilities to be constructed in accordance with Section 9a, paragraph (2), sentence 3.

(3) The financial security required pursuant to paragraph (2), No. 4, in order to cover the legal liability for damages need not be provided for the carriage of the nuclear fuel referred to in Appendix 2 hereto.

(4) The licence shall be granted for each individual carriage; a general licence may be granted to an applicant for a period not exceeding three years provided that this is not contrary to the purposes referred to in Section 1, paragraphs (2)-(4).

(5) A duplicate or certified copy of the licensing notice shall be available during carriage. Furthermore, the carrier shall have available a certificate in conformity with the requirements of Article 4(c) of the Paris Convention unless the particular carriage concerned does not require, pursuant to paragraph (3) above, any provision of financial security covering the legal liability to pay compensation for damage. The licensing notice and the certificate shall be presented to the competent authority and its duly authorised agents on request.

(6) Paragraph (5), first sentence, shall not apply to carriage by rail attended to by a railroad operator. In all other respects, nothing contained herein shall affect any legal provision applicable to carriers and relating to the carriage of dangerous goods.

Section 4a

Financial security for international carriage

Adopted: 22 April 2002

(1) Subject to paragraphs (3) and (4), the financial security required pursuant to Section 4, paragraph (2), No. 4, to cover the legal liability for damages in the international carriage of nuclear fuel is deemed to have been provided if the certificate of financial security required under Article 4(c) of the Paris Convention relates to the operator of a nuclear installation located in one of the Contracting States of the Paris Convention.

(2) Insurer as defined in Article 4(c) of the Paris Convention shall be:

1. an insurance company licensed to operate a third party liability insurance business within the Federal Republic of Germany;

2. an insurance company from another country as per the definition of Section 105, paragraph (1), of the Act on the Supervision of Insurance Companies which is licensed to operate a third party liability insurance business within its country of domicile, provided that the obligations of a third party liability insurer are not only assumed by it but also by an insurer or pool of insurers licensed to do so in accordance with the provisions of No. 1.

Other financial security in lieu of insurance may be permitted if it is assured that the party obliged to provide security will be in a position to meet its legal liability to pay compensation for damage within the scope of the requirements of financial security as long as claims against such party have to be anticipated.

(3) If the Brussels Supplementary Convention has not yet come into force in a Contracting State of the Paris Convention, the granting of a licence pursuant to Section 4 for the transit of nuclear fuel may be made subject to the condition that the maximum liability of the operator of the nuclear installation provided for in such Contracting State may be increased with respect to nuclear incidents occurring during carriage within Germany to the extent necessary in view of the amount and nature of the nuclear fuel and the safety measures taken. The operator of the nuclear installation shall furnish proof of the provision of financial security for such increased maximum liability by submitting a certificate issued by the responsible authority of such Contracting State.

(4) For imports or exports of nuclear fuel from or to any other Contracting State of the Paris Convention in which the Brussels Supplementary Convention has not yet come into force, the granting of a licence pursuant to Section 4 may be made subject to the condition that the operator of the nuclear installation located within Germany, to or from which the nuclear fuel shall be carried, assumes liability in accordance with the provisions hereof for nuclear incidents occurring during such carriage within Germany if the maximum liability provided in such other Contracting State of the Paris Convention is not adequate in view of the amount and nature of the nuclear fuel and the safety measures taken.

Section 4b

Carriage of nuclear substances in special cases

Adopted: 15 July 1985

(1) Any person carrying nuclear substances without requiring a licence pursuant to Section 4 shall furnish proof to the responsible authority, before commencement of such carriage, that the necessary financial security for covering the legal liability for damages has been provided. If the financial security offered is insufficient the authority shall determine the necessary financial security according to the principles of Section 13, paragraph (2), No. 1, Section 4, paragraph (5), second and third sentences, and Section 4a, shall be applied.

(2) Paragraph (1) above shall not be applied to the carriage of the nuclear substances referred to in Appendix 2 hereto.

Section 5

Authorised possession of nuclear fuel; government custody

Adopted: 22 April 2002

(1) Whoever handles or carries nuclear fuel on the basis of a licence issued under the provisions of this Act or a statutory ordinance promulgated on the basis thereof, particularly anyone who:

1. carries nuclear fuel as authorised under Section 4;

2. stores nuclear fuel on the basis of a licence pursuant to Section 6;

3. treats, processes or otherwise utilises nuclear fuel in an installation licensed under Section 7 or on the basis of a licence pursuant to Section 9;

4. temporarily stores nuclear fuel in a state collecting facility on the basis of Sections 9a-9c, or who stores or disposes of nuclear fuel in a plant for the safekeeping or final disposal of radioactive waste;

shall be authorised to possess nuclear fuel.

An order to store nuclear fuel pursuant to Section 19, paragraph (3), sentence 2, No. 2, shall likewise authorise the possession of nuclear fuel.

(2) In the interests of protecting the general public, whoever is in direct possession of nuclear fuel without being duly authorised to do so pursuant to paragraph (1), sentence 1, is obliged to ensure that the nuclear fuel is surrendered to the custody of a party who is authorised to possess nuclear fuel in accordance with paragraph (1), sentence 1. Sentence 1 shall not apply to persons who find and pick up nuclear fuel, acquire the actual control of nuclear fuel without intending to do so, or who acquire actual control of nuclear fuel without being aware of what it is.

(3) In the case of paragraph (2), sentence 1, if storage with the direct holder on the basis of a licence pursuant to Section 6 or other ownership pursuant to paragraph (1), sentence 1, proves impossible, the nuclear fuel shall be surrendered to government custody by delivering it to the authority responsible for custody without delay, until such time as authorised possession is established, unless an order pursuant to Section 19, paragraph (3), sentence 2, No. 2, contains or permits provisions to the contrary. In the interests of protecting the general public, whoever has surrendered nuclear fuel pursuant to sentence 1 shall ensure authorised possession pursuant to paragraph (1), sentence 1, in conjunction with paragraph (2), sentence 1. Sentence 2 shall apply accordingly to the owners of utilisation and consumption rights to nuclear fuel held in government custody, and to anyone who is required to accept or accept the return of nuclear fuel from a third party without being duly authorised to possess the nuclear fuel in accordance with paragraph (1), sentence 1.

(4) Any nuclear fuel whose authorised owner in accordance with paragraph (1) cannot be ascertained or cannot be called upon shall be placed in government custody.

(5) In the case of government custody, the necessary precautions in the light of the state of the art in science and technology to prevent damage resulting from the storage of nuclear fuel shall be taken, and necessary protection shall be provided against disruptive action or other interference by third parties.

(6) The removal of nuclear fuel from government custody or the surrender of nuclear fuel shall only be admissible to a designated party who is authorised to possess such nuclear fuel in accordance with paragraph (1), sentence 1.

(7) In order to enforce the obligations pursuant to paragraph (2), sentence 1, and paragraph (3), sentences 2 and 3, the authority responsible for custody may issue orders against the persons cited in these paragraphs for the nuclear fuel to remain with the obligated party or for it to be surrendered to a party with authorised possession. Notwithstanding Section 11, paragraph (3), of the Administrative Enforcement Act, the maximum amount of the administrative fine shall be 500 000 euros. The powers of the supervisory authorities pursuant to Section 19, paragraph (3), shall remain unaffected.

(8) Paragraphs (1)-(7) shall not apply to nuclear fuel contained in radioactive waste.

Section 6

Licence for the storage of nuclear fuel

Adopted: 22 April 2002

(1) Any storage of nuclear fuel outside government custody shall require a licence. A licence shall furthermore be required for any significant amendment to approved storage.

(2) A licence shall be granted if there is a need for such storage and if:

1. there are no known facts giving rise to doubts as to the reliability of the applicant or of the persons responsible for the management and supervision of such storage, and the persons responsible for such management and supervision have the requisite qualification;

2. the necessary precautions have been taken in the light of the state of the art in science and technology to prevent damage resulting from the storage of nuclear fuel;

3. the necessary financial security has been provided for covering the legal liability to pay compensation for damage;

4. the necessary protection has been provided against disruptive action or other interference by third parties.

(3) Whoever stores irradiated nuclear fuel in shipping and storage containers in a separate storage building within the enclosed site of an installation for the fission of nuclear fuel for the commercial generation of electricity in order to comply with the obligations under Section 9a, paragraph (2), sentence 3, until such time as it is surrendered to a facility for the final disposal of radioactive waste, shall require a licence pursuant to paragraph (1). The licence requirements of Nos. 1-4 in paragraph (2) shall apply accordingly.

(4) A licence for the temporary storage of nuclear fuel in the form of irradiated fuel rods within an enclosed site on which a licensed activity pursuant to Section 7 is practised shall be granted to anyone who has applied for the requisite storage licence based on the obligation pursuant to Section 9a, paragraph (2), sentence 3. The licence shall be limited until the date when the licence required under Section 9a, paragraph (2), sentence 3, can be utilised, or until the storage application has been revoked or effectively rejected, but no longer than five years; the period of validity of the licence may be extended by one year upon application. The licence pursuant to sentences 1 and 2 must only be issued subject to the submission of evidence of an alternative facility for proper storage once this time limit has expired. Such evidence must be re-submitted annually. A decision regarding the licence application should be reached within nine months of receipt of the application and submission of full application documents. The responsible authority may extend this period by three months if necessary due to the complexity of the investigations or for reasons attributable to the applicant; justification for the extension of this limit must be given to the applicant. Otherwise, paragraph (2) shall apply accordingly.

Section 7

Licensing of installations

Adopted: 22 April 2002

(1) Whoever erects, operates or otherwise holds a stationary installation for the production, treatment, processing or fission of nuclear fuel or the reprocessing of irradiated nuclear fuel or materially alters such installation or its operation, shall require a licence. No further licences will be issued for the construction and operation of installations for the fission of nuclear fuel for the commercial generation of electricity or of facilities for the reprocessing of irradiated nuclear fuel. This shall not apply to material alterations to such installations or the operation thereof.

(1a) The authorisation to operate an installation for the fission of nuclear fuel for the commercial generation of electricity shall expire once the electricity volume for that installation as listed in Appendix 3, column 2, or the electricity volume derived from transfers pursuant to paragraph (1b) has been produced. Production of the electricity volumes listed in Appendix 3, column 2, shall be measured by means of a measuring device. The measuring device pursuant to sentence 2 must be approved and calibrated. Any measuring device which is not approved and calibrated must not be used. Anyone who uses a measuring device pursuant to sentence 2 must install and connect the measuring device without delay, and must handle and maintain it in such a way that the accuracy of the measurement and the reliable reading of the indicators is guaranteed. The provisions of the Calibration Act and the Calibration Ordinance promulgated on the basis of this Act shall apply. The licensee shall have the proper status of the calibrated measuring device checked and certified each calendar year by an expert organisation, and shall also have the quantity of electricity generated each calendar year checked and certified by an auditor or auditing company within a one-month period.

(1b) The electricity volumes pursuant to Appendix 3, column 2, may be wholly or partially transferred to another installation, provided the receiving installation commenced commercial power operation later than the donating installation. Notwithstanding sentence 1, electricity volumes may also be transferred from an installation which began commercial power operation later than the receiving installation, subject to the approval of the transfer by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety by agreement with the Federal Chancellery and the Federal Ministry of Economics and Technology. Approval pursuant to sentence 2 is not necessary if the donating installation is to permanently discontinue power operation and an application for decommissioning of the plant pursuant to paragraph (3), sentence 1, has been submitted.

(1c) The licensee must:

1. notify the responsible authority, on a monthly basis, of the volumes of electricity generated in the previous month as per the definition of paragraph (1a) in conjunction with Appendix 3, column 2;

2. submit to the responsible authority the results of the checks and certificates pursuant to paragraph (1a), sentence 3, within one month of receipt;

3. notify the responsible authority of any transfers implemented between installations pursuant to paragraph (1b) within one week of determining the transfer.

In the first monthly notification of the electricity volume generated pursuant to sentence 1, No. 1, the licensee must submit notification of the electricity volume generated between 1 January 2000 and the last day of April 2002, which must have been checked and certified by an auditor or auditing company. The period of the first monthly notification shall commence as of 1 May 2002. The information submitted pursuant to sentence 1, Nos. 1-3, and specification of the residual electricity volume remaining will be published by the responsible authority in the Federal Bulletin [*Bundesanzeiger*]; the quantities of electricity generated pursuant to sentence 1, No. 1, shall be published annually in the Federal Bulletin as an annual total for a given calendar year, with monthly publication in cases where the anticipated residual operating period is less than six months.

(1d) For the nuclear power station Mülheim-Kärlich, paragraph (1a), sentence 1, paragraph (1b), sentences 1-3, and paragraph (1c), sentence 1, No. 3, shall apply subject to the proviso that the electricity volume listed in Appendix 3, column 2, may only be produced by the nuclear power stations listed therein after transferring to them.

(2) A licence may only be granted if:

1. there are no known facts giving rise to doubts as to the reliability of the applicant and of the persons responsible for the erection and management of the installation and the supervision of its operation, and the persons responsible for the erection and management of the installation and the supervision of its operation have the requisite qualification;

2. it is assured that the persons who are otherwise engaged in the operation of the installation have the necessary knowledge concerning the safe operation of the installation, the possible hazards and the protective measures to be taken;

3. the necessary precautions have been taken in the light of the state of the art in science and technology to prevent damage resulting from the erection and operation of the installation;

4. the necessary financial security has been provided to comply with the legal liability to pay compensation for damage;

5. the necessary protection has been provided against disruptive action or other interference by third parties;

6. the choice of the site of the installation does not conflict with overriding public interests, in particular in view of its environmental impacts.

(3) The decommissioning of an installation as defined in paragraph (1), sentence 1, as well as the safe confinement of an installation, or the dismantling of an installation or of parts thereof shall require a licence. Paragraph (2) shall apply accordingly. A licence pursuant to the first sentence shall not be required to the extent the scheduled measures have already been the subject of a licence pursuant to paragraph (1), sentence 1, or of an order pursuant to Section 19, paragraph (3).

(4) All federal, *Länder*[2], local and other regional authorities whose jurisdiction is involved shall take part in the licensing procedure. In the case of differences of opinion between the licensing authority and a federal authority taking part in the procedure, the licensing authority shall obtain instructions from the Federal Ministry in charge of nuclear safety and radiation protection. In all other respects, the licensing procedure shall be governed by a statutory ordinance in accordance with the principles laid down in Sections 8, 10, paragraphs (1)-(4) and (6)-(8), (10), second sentence, and 18 of the Federal Pollution Control Act; this may stipulate that when examining the environmental impacts of the overall measures planned with regard to the decommissioning, safe confinement or the dismantling of installations for the fission of nuclear fuel or parts thereof, the requirement for a public hearing may be waived.

(5) Paragraphs (1), (2) and (4) shall apply accordingly to non-stationary installations. However, the statutory ordinance referred to in paragraph (4), third sentence, may provide that a project need not be publicly announced and the documents need not be disclosed for public inspection and that in such a case objections will not be discussed at a hearing.

(6) Section 14 of the Federal Pollution Control Act shall apply accordingly to the impacts of a licensed installation on other premises.

Section 7a

Advance notice

Adopted: 15 July 1985

(1) Upon application, an advance notice may be issued with respect to individual aspects on which the granting of the licence for an installation pursuant to Section 7 depends, in particular with respect to the choice of the site of the installation. The advance notice shall become invalid if the applicant does not apply for the licence within two years from the date on which such notice has become final; upon application, this term may be extended for up to a further two years.

(2) Section 7, paragraphs (4) and (5), as well as Sections 17 and 18 shall apply accordingly.

Section 7b

Objections by third parties in the case of a partial licence or advance notice

Adopted: 15 July 1985

To the extent that an application has been decided upon by the grant of a partial licence or an advance notice pursuant to Sections 7 or 7a, and to the extent that such decision has become final, third parties shall not be entitled, in any subsequent procedure for the licensing of the installation, to raise objections on the basis of facts which had already been presented or which such third parties might have presented in view of the documents or the notice which had been disclosed for public inspection.

2. *Länder* (singular = *Land*): States making up the Federal Republic of Germany.

Section7c (Repealed)

Section 8

Relation of this Act to the Federal Pollution Control Act and the Safety of Equipment Act

Adopted: 27 December 2000

(1) The provisions of the Federal Pollution Control Act relating to installations requiring a licence and to the prohibition of the further utilisation of such installations shall not apply to installations requiring a licence pursuant to Section 7, insofar as the protection against the hazards of nuclear energy or the detrimental effects of ionising radiation are concerned.

(2) If an installation requiring a licence pursuant to Section 4 of the Federal Pollution Control Act requires a licence pursuant to Section 7 hereof, the latter shall include the licence pursuant to Section 4 of the Federal Pollution Control Act. The nuclear licensing authority shall make its decision in agreement with the *Länder* authority in charge of pollution control and in compliance with the provisions of the Federal Pollution Control Act and the statutory ordinances issued thereunder.

(3) With respect to installations which require supervision pursuant to Section 2, paragraph (2a), of the Safe Plant and Equipment Act and are used as parts of installations requiring a licence pursuant to Section 7 hereof, the licensing authority may, on a case-to-case basis, grant exemptions from the applicable legal provisions relating to the erection and operation of installations requiring supervision, to the extent that such exemption is due to the special technical nature of the installations pursuant to Section 7.

Section 9

Treatment, processing and other utilisation of nuclear fuel outside installations requiring a licence

Adopted: 22 April 2002

(1) Whoever treats, processes or otherwise utilises nuclear fuel outside installations of the kind referred to in Section 7 shall require a licence. Furthermore, a licence shall be required by any person who applies a method of treating, processing or otherwise utilising nuclear fuel that is materially different from the method specified in the licensing instrument or who materially alters the operating establishment or its location as specified in the licensing instrument.

(2) A licence may only be granted if:

1. there are no known facts giving rise to doubts as to the reliability of the applicant or of the persons responsible for the management and supervision of the utilisation of the nuclear fuel and provided the persons responsible for the management and supervision of the nuclear fuel have the qualification required for this purpose;

2. it is assured that the persons who are otherwise engaged in connection with the intended use of the nuclear fuel have the necessary knowledge of the possible hazards and the protective measures to be taken;

3. the necessary precautions have been taken in the light of the state of the art in science and technology to prevent damage resulting from the utilisation of the nuclear fuel;

4. the necessary financial security has been provided for covering the legal liability to pay compensation for damage;

5. the necessary protection has been provided against disruptive action or other interference by third parties;

6. the choice of the location where the nuclear fuel is to be utilised does not conflict with overriding public interests, in particular in view of the non-contamination of water, air and soil.

Section 9a

Utilisation of residual radioactive material and disposal of radioactive waste

Adopted: 22 April 2002

(1) Whoever erects, operates, otherwise holds, materially alters, decommissions or disposes of installations in which nuclear fuel is handled, or handles radioactive material outside such installations, or operates installations for the generation of ionising radiation, shall make provisions to assure that residual radioactive material as well as disassembled or dismantled radioactive components are utilised without detrimental effects in conformity with the purposes referred to in Section 1, Nos. 2-4, or are disposed of as radioactive waste (direct final disposal) in a regulated manner. The delivery of irradiated nuclear fuel originating from the operation of installations for the fission of nuclear fuel for the commercial generation of electricity to an installation for the reprocessing of irradiated nuclear fuel for the purposes of non-detrimental utilisation shall become unlawful as of 1 July 2005.

(1a) The operators of installations for the fission of nuclear fuel for the commercial generation of electricity are required to furnish proof that they have taken adequate precautions in order to comply with their obligations pursuant to paragraph (1) for the irradiated fuel incurred and the radioactive fuel yet to be incurred during the course of the operational period envisaged in accordance with Section 7, paragraphs (1a) and (1b), including any radioactive waste to be returned in the case of reprocessing of irradiated nuclear fuel (proof of waste management precautions). This proof must be updated annually as per 31 December of each year and submitted by 31 March of the following year at the latest. Any significant changes in the requirements on which the management precautions are based must be notified to the responsible authority without delay.

(1b) For the purposes of regulated disposal, proof must be furnished showing that the safe storage in interim storage facilities of both irradiated nuclear fuel and returned radioactive waste from the reprocessing of irradiated nuclear fuel is guaranteed until such time as it is surrendered to a facility for final disposal. Proof regarding the disposal of irradiated nuclear fuel is provided in

the form of realistic projections showing the availability of adequate interim storage facilities to meet requirements. Regarding the interim storage requirements for irradiated nuclear fuel over the next two years on the basis of realistic projections, proof must be furnished that interim storage facilities are both legally and technically available, either by the party responsible for management or a third party. Proof concerning the disposal of returned radioactive waste from the reprocessing of irradiated nuclear fuel must be furnished in the form of realistic projections showing the availability of adequate interim storage facilities as per the date of the bindingly agreed return of such radioactive waste. Notwithstanding paragraph (1a), sentence 1, proof of the regulated disposal of returned radioactive waste may be furnished by a third party if they are responsible for interim storage of the returned radioactive waste on behalf of the party responsible for management. In addition to realistic projections pursuant to sentence 4, the third party is also required to prove that the interim storage requirements of the party responsible for management will be contractually assured according to requirements. In cases where several parties responsible for management have transferred the responsibility for furnishing proof to one and the same third party, the latter may provide joint proof (collective proof). The collective proof shall consist of realistic projections pursuant to sentence 4 for the total interim storage requirements of the parties, together with evidence that this will be contractually assured according to requirements.

(1c) Insofar as the permissible non-detrimental utilisation of irradiated nuclear fuel pursuant to paragraph (1), sentence 2, is envisaged, proof must be furnished showing the guaranteed reuse of plutonium extracted from reprocessing as well as any future plutonium to be extracted in installations for the fission of nuclear fuel for the commercial generation of electricity; this shall not apply to plutonium which has already been reused by 31 August 2000, or to plutonium which has already been extracted and for which the utilisation and consumption rights have already been transferred to third parties by the above date. In the case of reuse in installations for the fission of nuclear fuel for the commercial generation of electricity within the scope of validity of this Act, this proof shall be deemed to have been furnished, provided realistic projections are available for the reprocessing of irradiated nuclear fuel, for the production of fuel rods with the plutonium generated from reprocessing and the plutonium yet to be incurred, and for the use of said fuel rods, and provided the measures required to implement these projections within the next two years are verified via the submission of contracts or excerpts of contracts or via corresponding confirmations from third parties having suitable facilities for such purposes, or in cases where the fuel rods are to be used in suitable installations belonging to the party responsible for management, via submission of the plans for such use. Proof of reuse in other installations operating within the European Union or Switzerland for the commercial generation of electricity shall be deemed to have been furnished, provided binding confirmations are submitted showing the transfer of utilisation and consumption rights regarding the reuse of plutonium generated from reprocessing.

(1d) With reference to the uranium extracted from the reprocessing of irradiated nuclear fuel, the parties responsible for management are required to furnish proof of safe storage in the form of realistic projections showing the availability of adequate interim storage facilities according to requirements. Paragraph (1b), sentence 3, shall apply accordingly. As soon as the temporarily stored uranium is due to be removed from interim storage, this fact must be notified to the responsible authority, including the planned management channel, in order to comply with the obligations under paragraph (1).

(1e) Paragraph (1a) shall apply accordingly to the operators of installations for the fission of nuclear fuel for research purposes.

(2) Whoever holds radioactive waste shall surrender such waste to an installation pursuant to paragraph (3) below. This shall not apply to the extent that anything to the contrary has been provided for pursuant to sentence 3 or by an ordinance issued hereunder or has been ordered or approved pursuant to this Act or such ordinance. The operator of a plant for the fission of nuclear fuel for the commercial generation of electricity is required to ensure that an interim storage facility pursuant to Section 6, paragraphs (1) and (3), is constructed within the enclosed site, or pursuant to Section 6, paragraph (1), in the vicinity of the installation (a local interim storage facility), and that the irradiated nuclear fuel incurred is stored there until such time as it is surrendered to a facility for the final disposal of radioactive waste; the option of the delivery of irradiated nuclear fuel for reprocessing pursuant to paragraph (1), sentence 2, shall remain unaffected by this. Upon application, the responsible authority will concede exemptions from the precautionary obligation pursuant to sentence 3, provided the operator of the installation has submitted an application for decommissioning and has given a binding declaration of a date prior to 1 July 2005 by which operation of the installation for the fission of nuclear fuel for the commercial generation of electricity will be permanently discontinued. If the responsible authority grants an exemption from the precautionary obligation pursuant to sentence 3, the licence to operate the plant for the fission of nuclear fuel for the commercial generation of electricity shall expire as per the date cited by the operator in his application.

(3) The *Länder* shall establish state collecting facilities for the interim storage of the radioactive waste originating in their territories, and the Federation shall establish installations for the safekeeping and final disposal of radioactive waste. To fulfil their obligations, both the *Länder* and the Federation may avail themselves of the services of third parties. In order to fulfil its obligation, the Federation may wholly or partially assign the performance of its duties, together with the necessary jurisdictional powers, to third parties, provided they are able to offer a guarantee for the proper fulfilment of the assigned tasks; the third party will be subject to supervision from the Federation. The third party pursuant to sentence 3, may receive a fee for the use of installations for safekeeping and final disposal, instead of costs. Insofar as the performance of duties pursuant to sentence 3 has been assigned, the contributions levied pursuant to Section 21b, the advance payments levied on the basis of the statutory ordinance promulgated pursuant to Section 21b, paragraph (3), and the amounts levied by the state collecting facilities pursuant to Section 21a, paragraph (2), sentence 9, shall be deemed payments made to the third party. The Federation shall bear no responsibility for breaches of official duties in place of the third party pursuant to sentence 3; the third party must obtain adequate liability insurance coverage for any such damages resulting from breaches of official duties. Section 25 shall remain unaffected by this. Insofar as the performance of duties is assigned to third parties by the Federation pursuant to sentence 3, the Federation shall exempt the former from compensation liabilities under Section 25 up to a maximum amount of 2.5 billion euros. Any contravention of administrative acts adopted by the third party pursuant to sentence 3 shall be decided by the supervisory authority.

Section 9b

Plan approval procedure

Adopted: 22 April 2002

(1) The erection and operation of the federal installations referred to in Section 9a, paragraph (3), as well as any major alteration of such installations or their operation shall be subject to a plan

approval procedure. Section 74, paragraph 6, of the Administrative Procedures Act shall apply to the extent that the competent authority may grant on application or ex officio a planning licence instead of a plan approval only, if the major alteration of the installations mentioned in sentence 1 or of their operation is applied for, and if this alteration has no material adverse effects on the objects to be protected according to Section 2, paragraph 1, sentence 2, of the Act on Assessment of Environmental Effects. Section 76 of the Administrative Procedures Act shall not apply.

(2) During the plan approval procedure, the environmental impacts of the installation shall be assessed. The assessment of the environmental impacts shall be part of the examination pursuant to paragraph (4).

(3) To achieve the purposes referred to in Section 1 hereof, the plan approval notice may contain restrictions and obligations. To the extent necessary for the achievement of the purposes referred to in Section 1, Nos. (2)-(4), obligations may also be imposed subsequently.

(4) The plan approval notice may only be issued if the requirements referred to in Section 7, paragraph (2), Nos. 1-3 and 5 have been complied with. It may not be issued if:

1. the erection or operation of the proposed installation suggest that the common welfare will be impaired and that such impairment cannot be prevented by restrictions and obligations, or

2. the erection or operation of the installation conflicts with other provisions of public law, in particular with respect to the environmental impact of the installation.

(5) Sections 72-75, 77 and 78 of the Administrative Procedures Act shall apply to the plan approval procedure subject to the following conditions:

1. The announcement of the project and of the date of the hearing, the disclosure of the plan for public inspection, the raising of objections, the performance of the hearing and the service of the decisions shall be provided for by the statutory ordinance issued pursuant to Section 7, paragraph (4), third sentence. As far as nuclear safety and radiation protection are concerned, the provisions contained in this statutory ordinance shall apply accordingly to the form, contents, kind and scope of the plan to be submitted.

2. Where judgement has been reserved, the announcement and disclosure for public inspection of any documents subsequently submitted may be waived if such announcement and disclosure would not reveal any additional facts which may be material to third party interests.

3. The plan approval procedure shall not cover the acceptability of the project under the provisions of the mining and deep storage law. This question shall be decided upon by the authority otherwise in charge.

Section 9c

State collecting facilities

Adopted: 3 May 2000

The valid licensing provisions in this Act and in statutory ordinances promulgated on the basis of this Act governing the handling of radioactive material shall apply to the storage and processing of radioactive waste at state collecting facilities referred to in Section 9a, paragraph (3), sentence 1, clause 1.

Section 9d-9f (Repealed)

Section 9g

Preservation Order

Adopted: 6 April 1998

(1) To secure projects pursuant to Section 9b or to secure or continue a site investigation for facilities intended for final disposal of radioactive wastes, a statutory ordinance can specify a planning area for a maximum of ten years, on the area or in the subsurface of which essentially value-increasing changes, or changes which substantially impede the project pursuant to Section 9b or the site investigation are prohibited. The specification may be extended by statutory ordinance two times by a maximum of ten years in each case, provided that the conditions under sentence 1 continue to exist. Prior to such a specification pursuant to sentences 1 and 2, consultations must be held with the municipalities and districts which are affected by the specification. The preservation order pursuant to sentences 1 and 2 shall be revoked before expiry of the periods indicated, if the conditions for a specification cease to apply. The specification pursuant to sentences 1 and 2 becomes ineffective on the commencement of publication of the plan within the framework of the plan approval procedure pursuant to Section 9b of this Act, or pursuant to Section 57a of the Federal Mining Act.

(2) From the commencement of publication of the plan within the framework of the plan approval procedure pursuant to Section 9b, essentially value-increasing changes or changes which substantially impede the project may not be undertaken on the areas affected by the plan or in the area of the subsurface covered by the plan, until the planned use is made. Changes commenced previously in a lawful way, maintenance work and the continuation of a prior lawful use remain unaffected.

(3) Paragraph (2) shall apply *mutatis mutandis* in the case of projects on underground preparatory site investigation for facilities intended for final disposal of radioactive wastes based on the provisions of the Federal Mining Act; publication of the plan within the framework of the plan approval procedure pursuant to Section 9b of this Act shall be replaced by publication of the plan within the framework of the plan approval procedure pursuant to Section 57a of the Federal Mining Act.

(4) Upon application, the responsible authority shall allow exemptions from the preservation order pursuant to paragraphs (1)-(3), provided such exemptions do not conflict with overriding public interests and if upholding the preservation order would result in clearly unintended hardship in a particular case.

(5) If the preservation order pursuant to paragraphs (1)-(3) is of more than five years duration, the owners and other persons entitled to use can demand a reasonable monetary compensation for the resulting pecuniary loss. The compensation shall be paid by the party responsible for the project. Section 21b shall remain unaffected.

Section 10

Exemptions

Adopted: 6 April 1998

Exemptions from the provisions of Sections 3-7 and 9 may be granted by statutory ordinance to the extent that the amount or nature of the nuclear fuel or certain protective measures or devices suggest that damage resulting from a self-sustaining chain reaction or the effects of ionising radiation will not occur, and to the extent such exemptions are not contrary to the purposes referred to in Section 1, Nos. 3 and 4. Exemptions for radioactive waste from the provisions pursuant to Section 3 may be granted by statutory ordinances as detailed in Section 11, paragraph (1), No. 6.

Section 11

Enabling provisions (licence, notification, general approval)

Adopted: 22 April 2002

(1) Unless special provision has been made by this Act for nuclear fuel and installations as defined in Section 7, it may be provided by statutory ordinance that, in order to achieve the purposes referred to in Section 1:

1. The prospecting for and handling of radioactive material (extraction, production, storage, treatment, processing, other utilisation or disposal), transactions in radioactive material (acquisition or delivery to others), the carriage as well as imports and exports of such material shall require a licence or notification, stating the prerequisites and ancillary provisions under which and the techniques via which the release of radioactive material may be exempt from monitoring under this Act or a statutory ordinance promulgated on the basis of this Act, or radioactive material of natural origin may be exempt from monitoring under said provisions.

2. The erection and operation of installations for the generation of ionising radiation shall require a licence or notification.

3. A general approval may be issued for installations, equipment and devices containing radioactive material or generating ionising radiation, provided their design has been

approved by an authority to be specified in such statutory ordinance; such ordinance shall also specify the notifications to be made by the operators of such installations, equipment and devices.

4. Safety-related components whose manufacture is to be started before the application is filed or the licence granted, may only be installed in installations pursuant to Section 7, paragraph (1), sentence 1, if there is a justified interest in such prior manufacture and if a test procedure demonstrates that material, design, erection and manufacture meet the requirements referred to in Section 7, paragraph (2), No. 3; the ordinance shall further provide which authority shall be in charge of the procedure, which documents shall be submitted and which legal effects will ensue from such approval of prior manufacture.

5. Radioactive material may not be utilised in certain ways or for certain purposes, or may only be disposed of in certain ways, or may not be circulated or shipped across national borders, to the extent that such prohibition is necessary for the protection of life and health of the population against the hazards of radioactive material or for the enforcement of resolutions of the international organisations of which the Federal Republic of Germany is a member.

6. In order to implement legal instruments of the European Communities, the import, export and transit (international carriage) of radioactive material shall require a licence or permit, and the filing of notifications and reports, and the holding of documentation. Furthermore, it may also stipulate that permits may be furnished with collateral clauses.

7. Any work to protect against rays of natural origin shall require a licence or notification; further details of such work shall be given.

8. The appropriated addition of radioactive material to the manufacture of pharmaceuticals, medical products, plant protection products, pesticides, substances listed in Section 1, Nos. 1-5, of the Fertilizer Act or consumer goods, or the activation thereof, together with the international carriage of such products, shall require a licence or notification.

(2) The statutory ordinance may provide that licences, permits pursuant to paragraph (1), No. 6, and general approvals within the purposes of this Act will be granted subject to certain personal and objective conditions and may determine the procedure for granting such licences, permits pursuant to paragraph (1), No. 6, and general approvals.

(3) Where the release of radioactive material or the exemption from monitoring of radioactive material of natural origin pursuant to a statutory ordinance promulgated on the basis of paragraph (1), No. 1, envisages disposal in accordance with the provisions of the Closed Substance Cycle and Waste Management Act or statutory ordinances promulgated on the basis of said Act, such material must not be reused or recycled under the aforementioned provisions.

Section 12

Enabling provisions (protective measures)

Adopted: 22 April 2002

(1) To achieve the purposes referred to in Section 1, it may be provided by statutory ordinance:

1. Which precautions and supervisory measures, including the justification required under Article 6, paragraphs (1) and (2), 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 of the EC No. L 159, p. 1) and Article 3 of Council Directive 97/43/Euratom of 30 June 1997 on health protection of individuals against the dangers of ionising radiation in relation to medical exposure and repealing Directive 84/466/Euratom (Official Journal of the EC No. L 180, p. 22), must be taken in order to protect individuals and the general public with regard to the handling of and transactions in radioactive material, the erection, operation and possession of installations of the kind referred to in Sections 7 and 11, paragraph (1), No. 2, as well as the handling of and transactions in installations, equipment and devices of the kind referred to in Section 11, paragraph (1), No. 3, and also with regard to the appropriated addition of radioactive material or activation of material, in order to protect against ionising radiation of natural origin whilst working.

2. Which precautions have to be taken to prevent that certain radiation doses and certain concentrations of radioactive material in air and water are exceeded.

3. That the employment of persons in areas involving radiation exposure is only admissible after submission of a certificate issued by a specially authorised physician and that the supervisory authority, after consultation with authorised medical experts, will decide in the case of medical doubts concerning such employment.

3a. That, and in which way, an ethics commission should be involved in assessing projects for the use of radioactive material or ionising radiation on human beings in the interests of medical research, which requirements should be imposed on such an ethics commission in terms of its independence and expertise, and under which conditions its registration may be implemented or revoked, and how this will be publicised.

3b. That, and in which way, diagnostic reference figures are obtained, prepared and published in conjunction with the practice of medicine or dentistry for the use of radioactive material or ionising radiation on human beings; the radiation exposure of individuals for medical purposes is ascertained; and surveys in this respect are carried out.

3c. That the responsible authorities shall determine and designate medical and dental practices; that, and in which way, these medical and dental practices are required to carry out tests in order to ensure that the requirements of medical science are observed when using radioactive material or ionising radiation in medicine; and that the procedures and equipment used comply with the respective required quality standards in order to ensure the minimum possible radiation exposure of patients; and that, and in which way, the results of such tests are notified to the responsible authorities.

4. That, and to which extent, persons who stay or have been staying in areas involving radiation exposure or who carry out or have carried out work pursuant to Section 11, paragraph (1), No. 7, are obliged to tolerate measurements of the radiation doses of their body and to undergo medical examinations and, to the extent necessary for the protection of other persons or of the general public, medical treatment, and that such examination or treatment is carried out by specially authorised physicians, and that, and in which way, the radiation exposure of individuals due to cosmic radiation when operating aircraft is ascertained, recorded and transmitted to offices to be outlined in greater detail or defined in a statutory ordinance promulgated on the basis of this Act, and that these offices forward such notifications to the radiation protection register.

4a. That measurement offices are defined by the responsible authorities in order to ascertain radiation exposure.

5. That, and in which way, records shall be kept of and reports submitted on the production, extraction, acquisition, possession, delivery and other whereabouts of radioactive material and measurements of doses and dose rates of ionising radiation,

6. That, and in which way, the operator of an installation in which radioactive material are or are to be handled is obliged to report to the supervisory authority whether, and if so which, deviations have occurred from the statements in the licensing application, including the accompanying documents, or from the licence.

7. That safety-related deviations from specified normal operation, in particular accidents and other events causing damage during the handling of radioactive material, the erection and operation of installations in which radioactive material are handled and during the handling of installations, equipment and devices of the kind referred to in Section 11, paragraph (1), No. 3, shall be reported to the supervisory authority; it may further be provided under which conditions and in which way the experience gained, with the exception of individual data concerning personal and factual circumstances, may be published for the purpose of improving the safety precautions by the agencies referred to in such ordinance,

7a. That, and in which way, the general public should be notified of any safety-related deviations from specified normal operation, particularly accidents; the valid rules of conduct and health protection measures which must be taken in the event of a radiological emergency; and that, and in which way, individuals who are deployed or may be deployed in rescue operations in the event of a radiological emergency are informed about the possible health risks and precautionary measures.

8. Which radioactive waste shall be surrendered to the state collecting facilities and to the federal installations pursuant to Section 9a, paragraph (3), and that, in view of the extent of the hazards involved, some other method of interim storage or other exceptions from the system of compulsory surrender will be acceptable or may be directed or approved.

9. Which requirements must be met with regard to the non-detrimental utilisation and regulated disposal of residual radioactive materials and disassembled or dismantled radioactive components; that, and with what content, information is to be submitted and updated in order to meet the obligations pursuant to Section 9a, paragraphs (1)-(1e); that, and in which way, radioactive waste, prior to its surrender to the state collecting facilities and the federal installations, must be treated and kept in interim storage; and that, and in

which way, proof of the quantity and nature of such waste must be furnished with respect to its treatment and interim storage as well as with respect to its carriage; how its surrender shall be effected; how the material must be kept and stored at the state collecting facilities and the federal installations; under which conditions and how it is to be transported from the state collecting facilities to the federal installations; and how installations pursuant to Section 9a, paragraph (3), must be supervised.

9a. That, and in which way, residues and other materials resulting from the types of work outlined in Section 11, paragraph (1), No. 7, are to be utilised or disposed of, particularly that, and in which way, radioactive contamination resulting from such residues or other materials is to be eliminated.

10. In which way the protection of radioactive material and of installations as defined in Section 7 and Section 11, paragraph (1), No. 2, and of federal installations pursuant to Section 9a, paragraph (3), shall be assured against disruptive action and other interference by third parties.

10a. That the responsible authorities may officially designate individuals and organisations as authorised experts.

11. Which requirements shall be established with regard to the training, professional knowledge and skills, particularly in terms of vocational experience, suitability, instruction in expert duties, extent of testing activities and other requirements and obligations, as well as the reliability and independence, of the authorised experts referred to in Section 20 hereof and also of those individuals employed as officially appointed authorised experts under a statutory ordinance promulgated on the basis of this Act, and which conditions, in view of their technical equipment and the co-operation of employees specialised in different lines, shall be met by organisations which are to be called in as authorised experts as defined in Section 20.

12. Which requirements are to be established with regard to the requisite technical qualifications or knowledge of the persons involved in the handling or carriage of radioactive material or in the erection and operation of installations pursuant to Section 7 and Section 9a, paragraph (3), sentence 1, second clause, and Section 11, paragraph (1), No. 2, or in the decommissioning or dismantling of installations or parts thereof pursuant to Section 7, paragraph (3), or in safe confinement or associated activities; the proof of such qualification or knowledge which must be furnished; and in which way the responsible licensing and supervisory authorities pursuant to Sections 23 and 24 hereof shall verify the existence of the requisite qualifications or knowledge; which requirements shall be imposed with regard to the recognition of training courses when furnishing proof of technical qualifications; and to what extent such individuals are required to attend a recognised training course at specified intervals.

13. That the supervisory authority may issue directions for the implementation of the legal provisions made under Nos. 1-10 above.

The first sentence, Nos. 1 and 7 shall apply accordingly to the carriage of radioactive material to the extent that the purposes referred to in Section 1, Nos. 1, 3 and 4, are to be achieved and provisions relating to financial security are concerned.

(2) The fundamental right to physical inviolability [Article 2, paragraph (2), first sentence of the Basic Law] shall be restricted as provided for in paragraph (1), first sentence, No. 4 above.

Section 12a

Enabling provision (Decision of the Steering Committee)

Adopted: 15 July 1985

The Federal Government is authorised to put into force by statutory ordinance, with the consent of the *Bundesrat* (Upper House of the Federal Parliament), decisions of the Steering Committee of the European Nuclear Energy Agency, or its successor, under Article 1(a)(ii) and (iii) and under Article 1(b) of the Paris Convention, and, insofar, to amend or repeal Appendix 1, paragraph (1), Nos. 2 and 3, and Appendix 2 hereto, provided this is necessary in order to accomplish the purposes referred to in Section 1.

Section 12b

Verification of reliability of persons as a protection against a diversion or major release of radioactive material

Adopted: 22 April 2002

(1) As a protection against unauthorised acts which may lead to a diversion or major release of radioactive material, the responsible licensing and supervisory authorities pursuant to Sections 23 and 24 are required to verify the requisite reliability of persons engaged in the handling or carriage of radioactive material and in the erection and operation of installations as defined in Sections 7 and 11, paragraph (1), No. 2, as well as federal installations pursuant to Section 9a, paragraph (3), subject to their written consent. Either a comprehensive reliability check (category 1), an extended reliability check (category 2) or a simple reliability check (category 3) shall be carried out.

(2) When carrying out reliability checks, the responsible authorities shall take the following action, which shall be graded according to the respective verification categories and with due regard for the affected individual's responsibility, his or her access authorisations to secure areas, the nature of the nuclear installation, particularly the nature and quantity of radioactive material, and additionally, with reference to the carriage of radioactive material, with due regard for the packaging and mode of transport:

1. verification of the individual's identity;

2. enquiries to the federal and regional offices of criminal investigation, other federal and regional police authorities, and the federal and regional intelligence services for any findings which may be significant to an assessment of reliability;

3. an enquiry to the federal commissioner for documents from the state security police [*Staatssicherheitsdienst* – Stasi] of the former German Democratic Republic in order to

ascertain the individual's possible official or unofficial employment by the state security police if the individual in question was born prior to 1 January 1970 and there is reason to suspect such employment;

4. a) a request for unrestricted information from the Federal Central Register [*Bundeszentralregister*], or

   b) a request for a police certificate of good conduct for authorities pursuant to Section 30, paragraph (5), of the Federal Central Register Act.

(3) If there are any factual grounds to doubt the reliability of the individual in question, the responsible authority may conduct one or more enquiries of the next highest verification category and may additionally:

1. submit an enquiry to the prosecuting authorities;

2. consult investigative or criminal records at the public prosecutors' offices;

3. when carrying out checks in conjunction with licences for the carriage of radioactive material, obtain excerpts from the Central Transport Register.

(4) The responsible authority shall give the affected individual an opportunity to put forward their case if the information obtained gives rise to doubts concerning the individual's reliability.

(5) The data obtained within the context of this verification process may only be stored in the required scope by the responsible authorities pursuant to Sections 23 and 24, may only be utilised for the purposes of verifying reliability as per the provisions contained herein, and may not be disclosed to other parties. The responsible authority shall notify the applicant of the outcome of the reliability verification process, but without disclosing the findings underlying this result. In the event of failure to ascertain reliability, the responsible authority shall notify the affected party of this fact in writing, stating the reasons.

(6) A statutory ordinance will regulate the details of the verification process, the detailed allocation to verification categories in accordance with paragraph (2), specification of the intervals at which verification must be repeated, and details of the survey process and the expiry dates.

Section 12c

Radiation protection register

Adopted: 9 October 1989

(1) The data relating to the radiation exposure of occupationally exposed persons and collected on the basis of an ordinance promulgated pursuant to Section 12, paragraph (1), first sentence, No. 4, shall be recorded in a register set up at the Federal Office for Radiation Protection [*Bundesamt für Strahlenschutz* – BfS], for the purpose of monitoring dose limits and observing the radiation protection principles. The person concerned shall be advised of the storage of the data.

(2) For the above purposes, the register may be used to furnish information, to the extent required, to the supervisory authorities in charge pursuant to Section 24 as well as to the agencies and persons responsible for precautions and monitoring measures for the protection of occupationally exposed persons.

(3) For the purpose of scientific research in the field of radiation protection, personal data may be transmitted to third parties with the consent of the person concerned. Without the consent of the person concerned, the data may be transmitted if the transmission or the proposed use of the data do not conflict with protectable interests of the person concerned or if the public interest in the research project by far outweighs the interest of the person concerned in secrecy. A transmission of personal data for purposes of scientific research shall be excluded if the purpose of the scientific research can be achieved with reasonable effort by using depersonalised data. Wider provisions concerning data protection and relating to the processing and use of personal data for scientific research shall remain unaffected.

(4) The recipient of personal data may only use the data for the purpose for which they were lawfully transmitted. The details with respect to the prerequisites and the procedure for the supply of information and the transmission of personal data shall be provided for by a statutory ordinance.

Section 13

Financial security for covering the legal liability to pay compensation for damage

Adopted: 22 April 2002

(1) In the licensing procedure, the administrative authority shall determine the type, terms and amount of the financial security to be provided by the applicant to meet the legal liability to pay compensation for damage. Such determination shall be renewed every two years and in the event of a material change in circumstances; in such a case, the administrative authority shall direct that the party obliged to provide financial security shall furnish proof within an adequate period of time that such security has indeed been provided.

(2) The financial security provided pursuant to paragraph (1) above shall:

1. in the case of installations and practices possibly involving liability under the Paris Convention in conjunction with Section 25, paragraphs (1)-(4) hereof, pursuant to Section 25a or pursuant to any of the international treaties referred to in Section 25a, paragraph (2), be adequate as compared with the hazards of the installation or practice;

2. in the case of other practices requiring a licence hereunder or under a statutory ordinance issued hereunder, assure fulfilment of the legal liability to pay compensation for damage to the extent appropriate to the circumstances.

(3) Within the limits laid down in paragraph (2) above, and to achieve the purposes referred to in Section 1, a statutory ordinance may be issued containing more detailed provisions as to the measures required for covering the legal liability to pay compensation for damage. The amount of the financial security shall be fixed subject to a maximum of 2.5 billion euros; the maximum

and the amounts of financial security shall be reviewed every five years with a view to maintaining the real value of the financial security.

(4) The Federation and the *Länder* shall not be obliged to provide financial security. To the extent a *Länd* may be held liable under the Paris Convention in conjunction with Section 25, paragraphs (1)-(4), under Section 25a or under any of the international treaties referred to in Section 25a, paragraph (2), the licensing authority shall apply paragraphs (1) and (2), as well as the statutory ordinance issued under paragraph (3) accordingly in order to determine the extent and amount to which the *Länd* shall guarantee fulfilment of the uncovered legal liability to pay compensation for damage by means of the indemnification pursuant to Section 34. For the purposes of this Act, such guarantee shall be the equivalent of financial security. Sentences 2 and 3 shall not apply to the Federation.

(5) For the purposes of this Act, legal liability to pay compensation for damage shall mean the liability to pay compensation based on statutory legal liability provisions of private law. Such legal liability to pay compensation for damage shall not include obligations arising under Sections 110 and 111 of Volume Seven of the German Social Code and shall include obligations for indemnification arising under Section 7, paragraph (6) hereof, in conjunction with Section 14 of the Federal Pollution Control Act, as well as similar obligations for indemnification or compensation only to the extent that the damage or impairment has been caused by an accident.

Section 14

Third party liability insurance and other forms of financial security

Adopted: 22 April 2002

(1) If, for installations and practices involving liability under the Paris Convention in conjunction with Section 25, paragraphs (1)-(4), under Section 25a or under any of the international treaties referred to in Section 25a, paragraph (2), or pursuant to Section 26, paragraph (1), in conjunction with paragraph (1a), financial security is provided in the form of third party liability insurance, Sections 158c-158h of the Insurance Contracts Act shall apply accordingly to such insurance except that the term referred to in Section 158c, paragraph (2), of the Insurance Contracts Act shall be two months and that such term, in the case of liability for the carriage of nuclear substances and radioactive material considered equivalent thereto in accordance with Section 26, paragraph (1a), shall be suspended for the duration of such carriage; if Section 158c, paragraph (4), of the Insurance Contracts Act is applied the indemnification under Section 34 shall not be taken into account. Section 156, paragraph (3), of the Insurance Contracts Act shall not be applied.

(2) If the financial security is not provided by third party liability insurance but by some other form of financial security, paragraph (1) shall apply accordingly.

Section 15

Priority of claims to be satisfied out of the financial security provided

Adopted: 15 July 1985

(1) If an operator of a nuclear installation obliged to provide financial security and a claimant are, at the time of a nuclear incident, subsidiaries of one and the same corporation as defined in Section 18 of the Stock Corporation Act, the financial security may only be used for the fulfilment of the legal liability for damages of such claimant if this will not prejudice the satisfaction of the claims of other claimants. The term nuclear installations as used in the first sentence shall include reactors which are part of a means of transport.

(2) If damage is caused to an industrial facility in the vicinity of the nuclear installation, paragraph (1), first sentence, shall apply accordingly if the site had been chosen because the energy generated at the nuclear installation was to be used for production processes.

(3) Subordinate claims pursuant to paragraphs (1) and (2) shall be of equal priority in relation to each other.

Section 16 (Repealed)

Section 17

Restrictions, obligations imposed, revocations, designation as operator of a nuclear installation

Adopted: 22 April 2002

(1) Licences and general approvals granted hereunder or under a statutory ordinance issued hereunder shall be in writing. To achieve the purposes referred to in Section 1, they may contain restrictions and may be subject to certain obligations. To the extent necessary to achieve the purposes referred to in Section 1, Nos. 2 and 3, obligations may be imposed subsequently. Licences, other than those granted pursuant to Section 7, as well as general approvals may be granted for a fixed period of time.

(2) Licences and general approvals may be withdrawn if any of their preconditions had not been fulfilled at the time such licences or approvals were granted.

(3) Licences and general approvals may be revoked if:

1. they have not been used within two years unless otherwise provided for in such licence or general approval;

2. any of their preconditions has ceased to be fulfilled at a later time and no remedial action has been taken within a reasonable period of time; or

3. the provisions hereof or of a statutory ordinance issued hereunder, orders or directions issued hereunder by the supervisory authorities, or the provisions of the notice relating to

the licence or general approval have been violated materially or repeatedly, or if a subsequently imposed obligation has not been complied with and no remedial action has been taken within a reasonable period of time;

4. even after setting an appropriate period of grace, proper proof pursuant to Section 9a, paragraphs (1a)-(1e), has not been furnished, or even after setting an appropriate period of grace, no results from the safety review to be conducted in accordance with Section 19a, paragraph (1), have been submitted.

(4) Licences shall be revoked if the financial security provided does not comply with the determination under Section 13, paragraph (1), and the party obliged to provide financial security does not furnish proof of such provision in accordance with the determination within a reasonable period of time to be fixed by the administrative authority.

(5) Licences or general approvals shall also be revoked if such revocation is necessary to avoid substantial hazards to the personnel, third parties or the general public and if subsequently imposed obligations cannot remedy the situation within a reasonable period of time.

(6) When a licence is granted for practices authorising the operation of a nuclear installation, the licensee shall be expressly designated as operator of a nuclear installation in the licensing notice.

Section 18

Compensation

Adopted: 15 July 1985

(1) If a licence or general approval granted hereunder or under a statutory ordinance issued hereunder is withdrawn or revoked, adequate financial compensation shall be paid to the licensee. If the withdrawal or revocation is pronounced by a federal authority, the Federation shall be liable for the compensation, and if the withdrawal or revocation is pronounced by a *Länder* authority, the *Länder* whose authority pronounced the withdrawal or revocation shall be liable for the compensation. The amount of the compensation shall be fixed with due regard to the interests of the general public and of the party concerned as well as the reasons which have led to such withdrawal or revocation. The compensation shall be limited to the amount of the expenses incurred by the party concerned and, in the case of an installation, by the current market value of such installation. As to the amount of compensation, legal proceedings may be instituted before a court of general jurisdiction.

(2) The authority shall not be obliged to pay compensation if:

1. the holder of a licence or general approval has obtained such licence or approval as a result of substantially incorrect or incomplete statements;

2. the holder of a licence or general approval, or persons actively engaged thereunder on behalf of such holder, have caused the revocation of the licence or general approval by their conduct, in particular by material or repeated violations of the provisions hereof or of statutory ordinances issued hereunder or of orders and directions issued by the

supervisory authorities, or of the terms and conditions of the notice granting the licence or general approval, or by non-compliance with subsequently imposed obligations;

3. the revocation had to be pronounced because the licensed installation or practice subsequently caused material hazards to the personnel, third parties or the general public.

(3) Paragraphs (1) and (2) shall apply accordingly to subsequently imposed obligations pursuant to Section 17, paragraph (1), third sentence.

(4) If a *Länd* is liable for compensation, the Federation or another *Länd* shall be obliged to contribute to such compensation in accordance with their overall interest in the withdrawal or revocation. The same shall apply if the Federation is liable for compensation.

Section 19

Government supervision

Adopted: 26 August 1992

(1) The handling of and dealing in radioactive material, the erection, operation and possession of installations of the kind referred to in Section 7 and Section 11, paragraph (1), No. 2, the handling of or dealing in installations, equipment and devices of the kind referred to in Section 11, paragraph (1), No. 3, as well as the carriage of such material, installations, equipment and devices, the appropriated addition of radioactive material and the activation thereof, where requirements in this respect exist under this Act or on the basis of a statutory ordinance pursuant hereto, as well as work of the type defined in Section 11, paragraph (1), No. 7, shall be subject to government supervision. The supervisory authorities shall in particular assure compliance with the provisions hereof and of the statutory ordinances issued hereunder, with the orders and directions issued hereunder and thereunder by the supervisory authorities, and with the terms and conditions of the notice granting the licence or general approval, as well as with subsequently imposed obligations. The provisions of Section 139b of the Trade and Industry Code shall apply accordingly to the powers and duties of the supervisory authorities. The Federal Ministry responsible for nuclear safety and radiation protection may communicate to the Federal Ministry of the Interior the information communicated by the authorities responsible pursuant to Sections 22-24, indicating violations of import and export provisions of this Act, or of statutory ordinances issued hereunder, or of orders and directives issued hereunder by the supervisory authorities, or of the terms and conditions of the notice granting the licence, to the extent this is necessary for the Federal Criminal Police Office to fulfil its duties in the prosecution of criminal offences in foreign trade transactions; unless anything to the contrary is provided for by law, the information so communicated may only be used for the purpose for which it is communicated.

(2) Any person commissioned by the supervisory authority, and the authorised experts called in by such authority pursuant to Section 20 hereof, as well as any person commissioned by other authorities which have been called in, shall at all times have access to places where radioactive material, installations of the kind referred to in Section 7 and Section 11, paragraph (1), No. 2, or installations, equipment and devices of the kind referred to in Section 11, paragraph (1), No. 3, are located, or where there are effects of radiation originating therefrom, or to places where there is reason to believe that such conditions prevail, and such persons shall be

authorised to carry out all examinations at such places which are necessary for the performance of their duties. In this connection, they may request the persons in charge or actively employed to provide them with the information they require. In all other respects, Section 13 of the Safe Plant and Equipment Act shall apply accordingly. The fundamental right to inviolability of the home as laid down in Article 13 of the Basic Law shall be restricted to the extent it conflicts with the powers granted hereby.

(3) The supervisory authority may order that a situation be discontinued which is contrary to the provisions hereof or of the statutory ordinances issued hereunder, or to the terms and conditions of the notice granting the licence or general approval, or to any subsequently imposed obligation, or which may constitute a hazard to life, health or property because of the effects of ionising radiation. In particular, the supervisory authority may order that:

1. certain protective measures shall be taken;

2. radioactive material shall be stored or kept in custody at a place designated by it;

3. the handling of radioactive material, the erection and operation of installations of the kind referred to in Section 7 and Section 11, paragraph (1), No. 2, as well as the handling of installations, equipment and devices of the kind referred to in Section 11, paragraph (1), No. 3, shall be suspended or, if a requisite licence is not granted or is definitely revoked, discontinued.

(4) Nothing herein contained shall affect the supervisory powers under other legal provisions and the general powers resulting from *Länder* legislation.

(5) Paragraphs (1)-(4) shall apply accordingly installations set up by third parties pursuant to Section 9a, paragraph (3), sentence 3.

Section 19a

Safety review

Adopted: 22 April 2002

(1) Anyone who operates an installation for the fission of nuclear fuel for the commercial generation of electricity is required to conduct a safety review of the installation and to submit the results thereof to the supervisory authority by the date specified in Appendix 4 of this Act, provided this date is later than 27 April 2002. Ten years after the date cited in Appendix 4, the results of a renewed safety review should be submitted.

(2) The obligation to submit the results of a safety review shall not apply if the licensee gives a binding declaration to the supervisory authority and the licensing authority stating that operation of the installation will be permanently discontinued no later than three years after the dates specified in Appendix 4. The authorisation to operate the installation shall expire as per the date cited in the owner’s statement pursuant to sentence 1. Sentences 1 and 2 shall apply accordingly in the event of paragraph (1), sentence 2.

Section 20

Authorised experts

Adopted: 26 August 1992

In the licensing and supervisory procedures hereunder or under the statutory ordinances issued hereunder, the authorities in charge may consult authorised experts. Section 13 of the Safe Plant and Equipment Act shall apply accordingly.

Section 21

Costs

Adopted: 22 April 2002

(1) Costs (fees and expenses) shall be charged:

1. for decisions with respect to applications filed pursuant to Sections 4, 6, 7, 7a, 9, 9a and 9b;

2. for determinations pursuant to Section 4b, paragraph (1), second sentence, and Section 13, paragraph (1), second sentence; for decisions pursuant to Section 9b, paragraph (3), second sentence; for decisions pursuant to Section 17, paragraph (1), third sentence, and paragraphs (2)-(5), insofar as Section 18, paragraph (2), provides that there is no obligation to pay a compensation; and for decisions pursuant to Section 19, paragraph (3);

3. for government custody of nuclear fuel pursuant to Section 5, paragraph (1);

4. for other official acts including tests and examinations carried out by the Federal Office for Radiation Protection [*Bundesamt für Strahlenschutz* – BfS] to the extent it is responsible pursuant to Section 23 and by the Federal Aviation Authority [L*uftfarht-Bundesamt* – LBA] to the extent it is responsible pursuant to Section 23b;

4a. for decisions pursuant to Section 9g;

5. for the other supervisory measures pursuant to Section 19 which have to be defined in the statutory ordinance referred to in paragraph (3) below;

6. for verification of the results of the safety review pursuant to Section 19a.

(1a) Costs will be levied in the following instances:

1. the revocation or withdrawal of an official act defined in paragraph (1), where this is the responsibility of the affected party and costs have not already been levied under paragraph (1);

2. the rejection of an application for performance of an official act defined in paragraph (1) for reasons other than the authority’s lack of jurisdiction;

3. the withdrawal of an application for performance of an official act defined in paragraph (1) after processing has begun but prior to its completion;

4. the complete or partial dismissal or withdrawal of an objection to:

    a) an official act defined in paragraph (1), or

    b) a fixed order for payment of costs pursuant to paragraph (1) in conjunction with the statutory ordinance promulgated in accordance with paragraph (3).

In the cases outlined in sentence 1, Nos. 1, 2 and 4a, fees may be set at up to the amount of the fee specified for the official act, in the cases outlined in sentence 1, No. 3, up to the amount of three-quarters of the fee specified for the official act, and in the cases outlined in sentence 1, No. 4b, up to the amount of 10% of the disputed contribution.

(2) Authorised experts' fees shall be reimbursed as expenses to the extent they are limited to amounts constituting an adequate consideration for the authorised expert's services in view of the requisite technical knowledge and the particular difficulties of appraisal, testing and examination.

(3) Further details shall be determined by statutory ordinance in accordance with the principles of the Administrative Costs Act. Such statutory ordinance shall define the facts and circumstances which are subject to a fee, and the fees shall be determined in the form of fixed rates or skeleton rates or in accordance with the value of the matter concerned. The rates shall be assessed so as to cover the personnel and non-personnel expenses involved in the official acts, tests or examinations; in the case of a supporting official act, the importance, economic value or other benefit to or for the person liable to pay the fee may also be taken into reasonable consideration. Said ordinance may contain provisions deviating from Section 8 of the Administrative Costs Act as far as the cost exemption of the Federal Office for Radiation Protection and the obligation to pay fees for the official acts of certain authorities are concerned. Notwithstanding Section 20 of the Administrative Costs Act, the period of prescription for the costs owed may be extended. It may be provided that the ordinance shall also be applicable to the administrative procedures pending at the time it takes effect, insofar as the costs concerned have not yet been assessed.

(4) Expenditures for protective measures and medical examinations carried out under this Act or under a statutory ordinance issued hereunder shall be borne by the party which, under this Act or under a statutory ordinance to be issued hereunder, requires a licence or is obliged to notify the practice necessitating such protective measure or medical examination.

(5) In all other respects, the relevant cost provisions under *Länder* law shall apply to implementation by the *Länder* authorities of this Act and other statutory ordinances adopted on the basis of Section 7, paragraph (4), sentence 3, and paragraph (5); Section 7a, paragraph (2), and Sections 10-12, except as provided in paragraph (2) above.

Section 21a

Costs (fees and expenses) or consideration for the use of installations pursuant to Section 9a, paragraph (3)

Adopted: 15 July 1985

(1) For the use of installations pursuant to Section 9a, paragraph (3), the parties obliged to surrender material shall be charged with costs (fees and expenses). Fees pursuant to Section 21, paragraph (2), and expenditures pursuant to Section 21, paragraph (4), may also be charged as expenses. The general principles of the law of fees relating to the origination of a fee, the parties entitled to receive and obliged to pay a fee, the definite assessment of a fee, advance payments, provision of security, due date, delay penalty, respite, abatement, remission, prescription, refund and legal remedies shall be applied in compliance with Sections 11, 12 and 13, paragraph (2), Sections 14 and 16-22 of the Administrative Costs Act, except as otherwise provided for in the statutory ordinance referred to in paragraph (2) below.

(2) The facts and circumstances which are subject to a fee pursuant to paragraph (1) above may be defined in a statutory ordinance providing for fixed rates or skeleton rates. The rates shall be assessed so as to cover the costs of the current management and maintenance of the installations pursuant to Section 9a, paragraph (3), to the extent these costs can be charged in accordance with the principles of business administration. Said costs shall also include interest on and depreciation of the capital invested. The depreciation shall be calculated on a uniform basis in accordance with the anticipated useful life and the kind of use. The capital share originating from contributions pursuant to Section 21b as well as from services and grants by third parties shall not be taken into account when calculating the amount of interest. In addition, both the extent and the kind of the use concerned shall be taken into consideration when assessing the fee. A basic fee may be charged for the use of state collecting facilities in order to cover the relevant capital expenditure. When assessing the costs or considerations charged for the surrender of material to a state collecting facility, expenses incurred in the subsequent delivery to federal installations as well as advance payments under Section 21b, paragraph (2) below may be included. These shall be paid over to the Federation.

(3) The state collecting facilities may charge a consideration for use, in lieu of costs, in accordance with a set of rules for such use. When calculating the consideration the principles of assessment contained in paragraph (2) above shall be taken into account.

Section 21b

Contributions

Adopted: 22 April 2002

(1) To cover the necessary expenses for planning, the acquisition of real estate and rights, facility-related research and development, investigation, the maintenance of land and facilities as well as the erection, extension and renewal of federal installations pursuant to Section 9a, paragraph (3), contributions shall be levied from any party which stands to benefit from the opportunity of utilising these installations for the regulated disposal of radioactive waste

pursuant to Section 9a, paragraph (1), sentence 1. Said necessary expenses shall also include the value, at the time of their availability, of the items and rights that are made available out of the assets of the operator of the installation.

(2) Advance payments against said contributions may be required to be made by those who have filed an application for the grant of a licence pursuant to Sections 6, 7 or 9, or under a statutory ordinance issued hereunder, for the handling of radioactive material or for the generation of ionising radiation or to whom such a licence has been granted, provided implementation of a measure pursuant to paragraph (1), sentence 1, has already begun.

(3) Further details concerning imposition, exemption, respite, abatement and refund with respect to contributions and advance payments may be laid down in a statutory ordinance. Said statutory ordinance may determine the parties entitled to receive or obliged to pay the contribution and the time at which the obligation to pay the contribution is incurred. The contributions shall be assessed in such a way that they cover the expenses incurred pursuant to paragraph (1) above which can be charged in accordance with the principles of business administration. The contributions shall be reasonable in relation to the benefits which the party obliged to pay the contributions derives from the installation. Advance payments against contributions shall be refunded, including adequate interest, to the extent they exceed the contributions determined on the basis of the expenses actually incurred.

(4) Any contributions or advance payments already levied, insofar as these have been levied in order to cover the expenses incurred, will not be refunded if a federal installation pursuant to Section 9a, paragraph (3), is ultimately not erected or operated, or if the party liable to pay the contribution or advance payment fails to take advantage of the opportunities outlined in paragraph (1), sentence 1.

Chapter 3

ADMINISTRATIVE AUTHORITIES

Section 22

Responsibility for international carriage and the supervision thereof

Adopted: 29 October 2001

(1) The Federal Office for Trade and Export Control [*Bundesamt für Wirtschaft und Ausfuhrkontrolle* – BAFA] shall decide on applications for licences pursuant to Section 3 and on the withdrawal or revocation of licences already granted. The same shall apply insofar as the statutory ordinances issued under Section 11 require licences and approvals for international carriage.

(2) The supervision of international carriage shall be the responsibility of the Federal Ministry of Finance or of the customs authorities appointed by said Ministry.

(3) To the extent that the Federal Office for Trade and Export Control (BAFA) makes decisions under paragraph (1) above, it shall be bound by the technical instructions issued by the Federal Ministry in charge of nuclear safety and radiation protection, notwithstanding its subordination to the Federal Minister for Industry and Technology and his powers to issue instructions under other legal provisions.

Section 23

Responsibility of the Federal Office for Radiation Protection

Adopted: 22 April 2002

(1) The Federal Office for Radiation Protection [*Bundesamt für Strahlenschutz* – BfS] shall be responsible for:

1. the government custody of nuclear fuel, including the promulgation of decisions pursuant to Section 5, paragraph (7), sentence 1;

2. the erection and operation of federal installations for the safekeeping and final disposal of radioactive waste, the transfer of duties by the Federation to third parties pursuant to Section 9a, paragraph (3), sentence 3, and supervision pursuant to Section 19, paragraph (5);

3. the licensing of the carriage of nuclear fuel and large sources,

4. the licensing of the storage of nuclear fuel outside government custody to the extent such storage is not preliminary to or part of a practice requiring a licence pursuant to Sections 7 or 9;

5. the withdrawal or revocation of licences pursuant to Nos. 3 and 4 above; and

6. the setting-up and maintenance of a register of the radiation exposures of occupationally exposed persons;

7. the creation and maintenance of an ethics commission register as defined in Section 12, paragraph (1), sentence 1, No. 3a, its registration and the revocation thereof;

8. the investigation, preparation and publication of diagnostic reference figures, determination of the radiation exposure of individuals for medical reasons, and the related surveys required in this respect on the basis of an ordinance pursuant to Section 12, paragraph (1), sentence 1, No. 3b;

9. the acceptance and publication of information pursuant to Section 7, paragraph (1c);

10. decisions pursuant to Section 9a, paragraph (2), sentence 4.

(2) Large sources as referred to in paragraph (1), No. 3 above shall be radioactive material whose activity per package to be carried or shipped exceeds 1 000 terabequerels.

(3) A statutory ordinance may stipulate that the Federal Office for Radiation Protection is responsible for:

1. approval of the use of radioactive material or ionising radiation on human beings within the context of medical research;

2. licensing of the designs of installations, equipment and other devices of the type defined in Section 11, paragraph (1), No. 3.

Section 23a

Responsibility of the Federal Administrative Office

Adopted: 22 April 2002

The Federal Administrative Office [*Bundesverwaltungsamt* – BVA] is responsible for decisions pursuant to Section 9g.

Section 23b

Responsibility of the Federal Civil Aviation Authority

Adopted: 3 May 2000

The Federal Civil Aviation Authority [L*uftfarht-Bundesamt* – LBA] is responsible for monitoring compliance with the requirements concerning the protection of individuals from radiation exposure caused by cosmic radiation during the operation of aircraft as specified in a statutory ordinance promulgated on the basis of this Act. Notwithstanding sentence 1, in the case of aircraft operated within the scope of the Federal Ministry of Defence, responsibility for monitoring shall lie with said Ministry or the offices appointed by it.

Section 24

Responsibility of *Länder* authorities

Adopted: 3 May 2000

(1) All other administrative functions under Chapter 2 and the statutory ordinances issued thereunder shall be discharged by the *Länder* on behalf of the Federation. The Federal Railroads Office [*Eisenbahn-Bundesamt* – EBA] shall be responsible for the supervision of the carriage of radioactive material by rail and ship or on maglev train effected by the federal railroads; this shall not apply to the carriage of radioactive material by private railroad companies if the carriage is exclusively effected on rails owned by those companies. The second sentence shall also apply to the licensing of such carriages unless the corresponding responsibility is as referred to in Section 23.

(2) The supreme *Länder* authorities designated by the *Länder* governments shall be responsible for the granting of licences pursuant to Sections 7, 7a and 9 and the withdrawal and revocation of such licences as well as the plan approval procedure pursuant to Section 9b and the cancellation of the plan approval notice. These authorities shall supervise the installations pursuant to Section 7 and the use of nuclear fuel outside such installations. In particular cases, they may delegate their functions to subordinate authorities. Complaints against orders of these subordinate authorities shall be decided upon by the supreme *Länder* authority. To the extent that provisions other than those laid down herein confer supervisory powers to other authorities, such responsibilities shall not be affected.

(3) In matters relating to the official duties of the Federal Ministry of Defence, the responsibilities outlined in paragraphs (1) and (2) above will be carried out by said Ministry or the offices appointed by it, in agreement with the Federal Ministry in charge of nuclear safety and radiation protection. The same shall apply to civilian employees in the case of troops and their civilian retinues who are stationed in the Federal Republic of Germany on the basis of international agreements.

Section 24a

Transmission of information

Adopted: 29 October 2001

The Federal Ministry responsible for nuclear safety and radiation protection may transmit information contained in nuclear licences granted by authorities in charge pursuant to Sections 22-24 (licensee, statutory bases, essentials of contents) to the supreme federal authorities responsible for foreign trade transactions to assist in the fulfilment of their duties with respect to the grant of licences or the supervision of foreign trade transactions. If, in individual cases, this information is insufficient, further information contained in the nuclear licence may be transmitted. Unless anything to the contrary is provided for by law, the information transmitted may be used by the recipient only for the purpose for which it was transmitted.

Chapter 4

LIABILITY

Section 25

Liability for nuclear installations

Adopted: 5 March 2001

(1) If damage is caused by a nuclear incident originating from a nuclear installation, the provisions of this Act, in addition to the provisions of the Paris Convention, shall apply to the liability of the operator of such nuclear installation. Irrespective of its binding character under international law, the Paris Convention and the Joint Protocol shall apply as national law in the Federal Republic of Germany, unless its provisions depend on reciprocity as effected by the entry into force of the Convention.

(2) If, in the case of a carriage of nuclear substances, including the storage incidental to such carriage, the carrier enters into a contract for the assumption of liability from the operator of a nuclear installation located within the territorial scope of this Act, such carrier shall be considered operator of the nuclear installation from the time of its assumption of liability. Said contract shall be in writing. The assumption of liability shall only be valid if it has been approved, upon application of the carrier, by the authority responsible for the licensing of carriage, prior to the commencement of the carriage of nuclear substances or any storage incidental thereto. Such licence may only be granted if the carrier is licensed to do business within the territorial scope of this Act, or if the carrier has its principal place of business as a forwarding agent within the territorial scope of this Act and the operator of the nuclear installation has declared its consent to the authority.

(3) The provisions of Article 9 of the Paris Convention relating to the exclusion of liability for damage caused by nuclear incidents which are a direct consequence of acts in an armed conflict, hostilities, civil war, insurrection or a grave natural disaster of an exceptional character, shall not be applicable. If the damage occurs in another country, the first sentence shall only apply insofar as such other country, at the time of the nuclear incident, has provided for a system of compensation in relation to the Federal Republic of Germany which is equivalent as to nature, terms and amount.

(4) The operator of a nuclear installation shall be liable, irrespective of the location of damage occurrence. Article 2 of the Paris Convention shall not apply.

(5) The operator of a nuclear installation shall not be liable under the Paris Convention if the damage was caused by a nuclear incident which is due to the nuclear substances referred to in Appendix 2 hereto.

Section 25a

Liability for nuclear ships

Adopted: 15 July 1985

(1) The provisions of this Chapter shall apply accordingly to the liability of the operator of a nuclear ship, including the following modifications:

1. The provisions of the Paris Convention shall be replaced by the corresponding provisions of the Brussels Convention on the Liability of Operators of Nuclear Ships (BGBl. 1975 II, p. 977). Irrespective of its binding character under international law, the latter shall apply as national law in the Federal Republic of Germany, unless its provisions depend on reciprocity as effected by its entry into force.

2. If the damage occurs in another country, Section 31, paragraph (1), shall apply, with regard to the amount exceeding the maximum amount under the Brussels Convention on the Liability of Operators of Nuclear Ships, only to the extent that the laws of such other country, at the time of the nuclear incident, provided for a settlement of the liability of operators of nuclear ships in relation to the Federal Republic of Germany which is equivalent as to nature, terms and amount. Section 31, paragraph (2), Sections 36, 38, paragraph (1), and Section 40 shall not apply.

3. Section 34 shall only apply to nuclear ships authorised to sail under the flag of the Federal Republic of Germany. If, within the territorial scope of this Act, a nuclear ship is built or equipped with a reactor for another country or persons of another country, Section 34 shall apply until such time as the nuclear ship is registered in such other country or acquires the right to sail under the flag of another country. Seventy-five percent of the indemnification pursuant to Section 34 shall be borne by the Federation and the remaining percentage by the *Länd* in charge of licensing the nuclear ship pursuant to Section 7.

4. In the case of nuclear ships which are not entitled to sail under the flag of the Federal Republic of Germany, this Chapter shall only apply if nuclear damage caused by the nuclear ship has occurred within the territorial scope of this Act.

5. Claims for damages shall be decided by the courts of the country under whose flag the nuclear ship is entitled to sail; in the cases referred to in No. 4 above, the court of the place within the territorial scope of this Act where the nuclear damage has occurred shall also have jurisdiction.

(2) To the extent international treaties on the liability for nuclear ships contain mandatory provisions deviating from those of this Act, such provisions shall take precedence over the provisions of this Act.

Section 26

Liability in other cases

Adopted: 13 December 2001

(1) If, in cases other than those referred to in the Paris Convention in conjunction with Section 25, paragraphs (1)-(4), loss of life, personal injury, deterioration of health or damage to property is caused by the effects of a nuclear fission process or the radiation of radioactive material or the effects of ionising radiation emanating from an installation for the generation of ionising radiation, the holder of the material subjected to nuclear fission, of the radioactive material or of the installation for the generation of ionising radiation shall be liable for damages pursuant to Sections 27-30, Section 31, paragraph (2), Section 32, paragraphs (1), (4) and (5), and Section 33. There shall be no liability to pay compensation if the damage was caused by an incident which neither the holder nor the persons acting on behalf of the holder in connection with such holding could have avoided by taking every reasonable precaution and which is neither due to a defective condition of the protective devices nor to a failure in their function.

(1a) Paragraph (1), sentence 2, shall not apply to damages caused by radioactive material which would fall under the definition of nuclear fuel, radioactive products and waste under application of the Paris Convention, the Brussels Convention on the Liability of Operators of Nuclear Ships or the Vienna Convention in conjunction with the Joint Protocol.

(2) Paragraph (1) above shall apply accordingly in cases where a damage of the kind referred to in paragraph (1) is caused by the effects of nuclear fusion.

(3) Any person who has lost possession of the material without having delivered it to a person entitled to such possession under this Act or under a statutory ordinance issued hereunder, shall be liable as if he were the holder.

(4) The provisions of paragraphs (1)-(3) above shall not apply if:

1. the radioactive material or installation for the generation of ionising radiation have been applied to the injured person by a physician or dentist, or under the supervision of a physician or dentist, in the course of medical treatment and the material or installations for the generation of ionising radiation used, as well as the necessary measuring equipment, have complied with the valid requirements of the Medical Products Act under the provisions of a statutory ordinance, or where this is absent, with the state of the art in science and technology, and the injury is not due to the fact that the material, installations for the generation of ionising radiation or measuring equipment have not, or not sufficiently, been maintained;

2. there is a legal relationship between the holder and the injured person under which the latter has accepted the risk associated with the material or installation for the generation of ionising radiation.

(5) Paragraph (1), second sentence, and paragraph (4), No. 2, shall not apply to the application of radioactive material or ionising radiation on humans in the course of medical research. If the holder of the radioactive material or installation for the generation of ionising radiation denies the causal relation between the application of the radioactive material or ionising radiation and

an injury that has occurred, he shall furnish proof that according to the state of the art in medicine there is no sufficient probability that such a causal relation exists.

(6) Whoever carries the material on behalf of a third party shall not be liable for damages under the provisions of paragraphs (1)-(3) above. Unless and until the consignee has taken possession of the material the consignor shall be liable for damages irrespective of whether or not the consignor is the holder of such material.

(7) Within the scope of application of paragraph (1), first sentence, all legal provisions shall remain unaffected under which the holder referred to in paragraph (1) and any persons considered as holders under paragraph (3), are liable to a greater extent than under the provisions hereof or under which a third party is liable for the damage.

Section 27

Contributory fault of the injured person

Adopted: 15 July 1985

If a fault of the person sustaining an injury has contributed to the damage sustained, Section 254 of the Civil Code shall apply; in the event of damage to property, the fault of the person in actual control thereof shall be deemed to be equivalent to that of the injured person.

Section 28

Extent of compensation in the case of death

Adopted: 15 July 1985

(1) In the event of death, compensation shall be paid in the form of a reimbursement of the costs of an unsuccessful treatment as well as a compensation for the pecuniary loss sustained by the deceased because of a loss or reduction of the earning capacity, an increase in needs or a handicap to the career of the deceased during his or her illness. In addition, the person liable to pay compensation shall refund the funeral costs to the person obliged to bear such costs.

(2) If the deceased, at the time he or she suffered the injury, had been or might have come under a legal obligation to provide maintenance to a third party who loses such maintenance as a result of the death, the person liable shall pay compensation to such third party to the extent of the maintenance which the deceased would have been obliged to pay during his or her life expectancy. Such liability shall also exist if the third party had been conceived but not yet born at the time the injury was afflicted.

Section 29

Extent of compensation for personal injury

Adopted: 14 March 1990

(1) In the event of a personal injury or a deterioration of health, compensation shall be paid in the form of a reimbursement of the costs of treatment as well as a compensation for the pecuniary loss sustained by the person injured because of a temporary or permanent loss or reduction of his or her earning capacity, an increase in needs or a handicap to the career during his or her illness.

(2) In the event of a personal injury or a deterioration of health, the person injured may also claim an adequate compensation for pain and suffering if the injury was afflicted wilfully or by negligence.

Section 30

Annuity

Adopted: 15 July 1985

(1) Damages for a loss or reduction of earning capacity, an increase in needs or a handicap to the career of the person injured as well as compensation to be paid to a third party pursuant to Section 28, paragraph (2), shall be paid in the form of an annuity.

(2) The provisions of Section 843, paragraphs (2)-(4), of the Civil Code shall apply accordingly.

(3) Although the court awarding an annuity may not have required security to be provided by the party liable, the party entitled to such annuity may nevertheless demand security if the financial situation of the party liable has deteriorated materially; similarly, in such a case, the party entitled to an annuity may also demand an increase in the amount of a security ordered by the court.

Section 31

Maximum amounts of liability

Adopted: 13 December 2001

(1) The liability of the operator of a nuclear installation under the Paris Convention in conjunction with Section 25, paragraphs (1), (2) and (4), and also under the Paris Convention and the Joint Protocol in conjunction with Section 25, paragraphs (1), (2) and (4), shall be unlimited. In the cases provided for in Section 25, paragraph (3), the liability of an operator shall be limited to the maximum amount of the governmental indemnification.

(2) If the damage occurs in another State, paragraph (1) shall only apply insofar as, at the time of the nuclear incident, said other State has made provisions with the Federal Republic of Germany pursuant to paragraph (1) which are equivalent in terms of nature, terms and amount. Otherwise, if the damage occurs in another State, the liability of an operator of a nuclear installation for the compensation of damages caused by nuclear incidents, including any additional compensation on the basis of international conventions, shall be limited to the amount envisaged by the other State in relation to the Federal Republic of Germany at the time of the nuclear incident. In relation to States whose sovereign territory does not contain any nuclear installations, the liability of an operator of a nuclear installation is limited to the maximum amount as specified in the Brussels Supplementary Convention.

(2a) Paragraph (2) shall also apply to the liability of a holder of radioactive material in the instances outlined in Section 26, paragraph (1a).

(3) In the event of damage to property, the party liable under the Paris Convention in conjunction with Section 25, paragraphs (1), (2) and (4), and under the Paris Convention and the Joint Protocol in conjunction with Section 25, paragraphs (1), (2) and (4), or under Section 26, shall only be liable up to the amount of the fair market value of such damaged property and the costs of protection against the radiation hazards originating from such property.

In the case of liability under the Paris Convention in conjunction with Section 25, paragraphs (1), (2)-(4), compensation for damage to the means of transport on which the nuclear substances were being carried at the time of the nuclear incident shall only be paid if the satisfaction of other claims has been secured from the maximum amount of the governmental indemnification in the cases outlined in paragraph (1), or from the maximum amount of liability in the cases outlined in paragraph (2) is assured.

Section 32

Limitation of actions

Adopted: 15 July 1985

(1) Claims for compensation under this Section shall be barred after three years from the date when the claimant became, or ought to have become, aware of the damage and of the identity of the

person liable, or irrespective thereof, after 30 years starting from the date of the incident causing the damage.

(2) In the cases referred to in Article 8(b) of the Paris Convention, the limitation period of 30 years under paragraph (1) above shall be replaced by a 20 years period starting from the date of theft, loss, jettison or abandonment.

(3) Claims for compensation because of death or personal injury under the Paris Convention which are brought before a court against the operator of a nuclear installation within ten years after the nuclear incident shall take precedence over claims lodged after the expiration of such periods.

(4) Where negotiations concerning compensation are pending between the person liable for compensation and the claimant, the run of the limitation period shall be suspended until such time as either party refuses to continue such negotiations.

(5) Otherwise, the provisions of the Civil Code concerning limitation of action shall apply.

Section 33

Several parties liable

Adopted: 15 July 1985

(1) If several parties are legally liable to pay compensation to a third party for damage caused by a nuclear incident or otherwise by the effects of nuclear fission or radiation emitted by radioactive material or the effects of ionising radiation emitted by an accelerator, they shall be jointly and severally liable to such third party except as otherwise provided for in Article 5(d) of the Paris Convention.

(2) In the cases of paragraph (1) above, the amount of compensation due from each of the parties liable shall be prorated among them according to the circumstances and in particular the extent to which the damage was predominantly caused by the one or the other party, except as otherwise provided for in Article 5(d) of the Paris Convention. However, the operator of a nuclear installation shall not be obliged to pay compensation exceeding the maximum amounts of liability pursuant to Section 31, paragraphs (1) and (2).

Section 34

Indemnification

Adopted: 22 April 2002

(1) If, as a result of the effects of a nuclear incident, the operator of a nuclear installation located within the territorial scope of this Act has become legally liable to pay compensation for damage under the provisions of the Paris Convention in conjunction with Section 25, paragraphs (1)-(4) and the Paris Convention and the Joint Protocol in conjunction with Section 25, paragraphs (1), (2) and (4) or under foreign laws applicable to the incident or in the

cases outlined in Section 26, paragraph (1a), the operator of the nuclear installation or owner of radioactive material shall be indemnified against any liability to pay compensation for damage to the extent such liability is not covered by or cannot be satisfied out of the financial security provided. The maximum amount of indemnification shall be 2.5 billion euros. The obligation to indemnify the operator shall be restricted to this maximum amount minus the amount which is covered by and can be met out of the financial security provided.

(2) If, after the occurrence of a harmful incident, recourse to such indemnification seems likely, the operator of the nuclear installation or holder of radioactive material shall be obliged to:

1. notify the Federal Ministry designated by the Federal Government and the *Länder* authorities designated by the *Länder* Governments without delay of such anticipation;

2. inform the responsible Federal Ministry and the responsible *Länder* authorities without delay of any claims for compensation which have been raised or preliminary investigations which have been instituted, and provide, upon request, all information which is necessary to examine the circumstance and appreciate the merits of the case;

3. comply with the instructions of the responsible *Länder* authorities with regard to negotiations, in and out of court, concerning the claims for compensation which have been raised;

4. refrain from acknowledging or satisfying any claim for compensation without the consent of the responsible *Länder* authorities unless such acknowledgement or satisfaction cannot be refused without obvious inequity.

(3) In all other respects, Sections 62 and 67 as well as the provisions of Title 6, Chapter 2, of the Insurance Contracts Act, with the exception of Section 152, shall apply accordingly to the indemnification hereunder.

Section 35

Apportionment

Adopted: 15 July 1985

(1) Where legal liabilities to pay compensation for damage resulting from an incident are expected to exceed the amount available to satisfy such liabilities, their apportionment and the procedure to be observed in this context shall be governed by an act or, pending such act, by statutory ordinance.

(2) The statutory ordinance referred to in paragraph (1) above may only make such provision for the apportionment of the sums available to cover the legal liability to pay compensation for damage as is necessary to avert hardships. Such statutory ordinance shall ensure that satisfaction of the claims of the injured persons as a whole shall not be unduly prejudiced by the satisfaction of individual claims.

Section 36

Sharing of the indemnification between the Federation and the *Länder*

Adopted: 22 April 2002

The Federation shall bear the indemnification pursuant to Section 34, but below an amount of 500 million euros, only 75%. The remainder shall be borne by the *Länd* in which the nuclear installation is located from which the nuclear incident originated or where the owner received his licence for possession.

Section 37

Recourse in the case of indemnification

Adopted: 5 March 2001

(1) If the operator of a nuclear installation or holder of radioactive material has been indemnified of the liability to pay compensation for damage pursuant to Section 34, recourse may be taken against such an operator of a nuclear installation or against such a holder of radioactive material to the extent of the indemnities paid if

1. the operator has violated the obligations pursuant to Section 34, paragraphs (2) or (3); however, recourse shall be excluded to the extent that such violation has not affected the ascertainment of the damage nor the ascertainment or extent of the indemnities paid;

2. the operator or, in the event of a legal entity, its legal representatives, in the discharge of the functions incumbent on them, caused the damage wilfully or by gross negligence;

3. the indemnities have been paid because the extent and amount of the financial security provided did not correspond to the extent and amount as determined by the authority in charge.

(2) Recourse may be taken against the operator of a nuclear installation or holder of radioactive material without the existence of the requirements cited in paragraph (1) if said individual is not a German citizen and his domicile, residence, or place of permanent abode is in a state which is neither a Party to the Treaties of the European Communities, nor to the Paris Convention in conjunction with the Joint Protocol, nor to any other convention with the Federal Republic of Germany concerning liability for nuclear damages which is in force at the time of the nuclear incident.

Section 38

Compensation from the Federation

Adopted: 5 March 2001

(1) If a party which suffered from the effects of a nuclear incident within the territorial scope of this Act cannot claim compensation pursuant to the laws of another Contracting State of the Paris Convention or the Vienna Convention in conjunction with the Joint Protocol which apply to such incident because:

1. the nuclear incident occurred in the territory of a Non-Contracting State of the Paris Convention or the Vienna Convention in conjunction with the Joint Protocol;

2. the damage was caused by a nuclear incident which is a direct consequence of acts in an armed conflict, hostilities, civil war, insurrection or a grave natural disaster of an exceptional kind;

3. the applicable laws do not provide for any liability for damage to the means of transport upon which the nuclear substances were located at the time of the nuclear incident;

4. the applicable laws do not provide for any liability of the operator if the damage is caused by ionising radiation emitted by another radiation source located in the nuclear installation;

5. the applicable laws provides a shorter limitation period or term of preclusion than is provided for herein; or

6. the total amount available for compensation is lower than the maximum amount of the governmental indemnification;

the Federation shall grant compensation up to the maximum amount of the governmental indemnification.

(2) The Federation shall further grant compensation up to the maximum amount of the governmental indemnification if the foreign laws applicable to damage suffered within the territorial scope of this Act, or the provisions of an international treaty, provide for such compensation to be paid to the injured person as, with regard to nature, terms and amount, is far lower than the compensation which the injured person would have been awarded had this Act been applied, or if prosecution in the state in whose territory the harmful event originated has no prospect of success.

(3) Paragraphs (1) and (2) above shall not apply to injured persons who are not Germans as defined in Article 116, paragraph (1), of the Basic Law and who do not have their habitual residence within the territorial scope of this Act, unless their mother country had provided, at the time of the nuclear incident, for an arrangement which, in relation to the Federal Republic of Germany, is equivalent as to nature, terms and amount.

(4) Claims under paragraphs (1) and (2) above shall be lodged with the Federal Office of Administration [*Bundesverwaltungsamt* – BVA]. Such claims shall lapse three years after the time at which the decision on compensation rendered under foreign or international law has become unappealable, or it becomes apparent that prosecution pursuant to paragraph (2) has no prospect of success.

Section 39

Exemptions from the indemnities to be paid by the Federation and the *Länder*

Adopted: 15 July 1985

(1) For purposes of the indemnification pursuant to Section 34 and the compensation pursuant to Section 38, claims for compensation without precedence pursuant to Section 15, paragraphs (1) and (2), shall not be taken into consideration.

(2) Compensation pursuant to Section 29, paragraph (2), shall only be included in the indemnification pursuant to Section 34 and the compensation pursuant to Section 38 if the award of compensation is necessary to avoid grave inequity in view of the particular severity of the injury.

Section 40

Actions against the operator of a nuclear installation located in another Contracting State

Adopted: 15 July 1985

(1) If, under the provisions of the Paris Convention, a court within the territorial scope of this Act has jurisdiction over actions for compensation against the operator of a nuclear installation located in another Contracting State of the Paris Convention, the liability of such operator shall be governed by the provisions of this Act.

(2) In derogation of paragraph (1) the following aspects shall be governed by the laws of the Contracting State in which the nuclear installation is located:

1. the person to be considered as operator;
2. whether the operator's liability will also cover nuclear damage suffered in a Non-Contracting State of the Paris Convention;
3. whether the operator's liability will cover nuclear damage caused by the radiation of another radiation source located in a nuclear installation;
4. whether and to what extent the operator's liability will cover damage to the means of transport upon which the nuclear substances were located at the time of the nuclear incident;
5. up to which maximum amount the operator will be liable;
6. after which period of time the claim against the operator will prescribe or be precluded;

7. whether and to what extent nuclear damage will be compensated in the cases referred to in Article 9 of the Paris Convention.

Chapter 5

ADMINISTRATIVE FINES

Sections 41-45 (Repealed)

Section 46

Administrative offences

Adopted: 2 April 2002

(1) An administrative offence is committed by any person who wilfully or negligently:

1. carries nuclear substances without having furnished proof of the financial security required pursuant to Section 4b, paragraph (1), first or second sentences;

2. erects an installation for the production, treatment, processing or fission of nuclear fuel or for the reprocessing of irradiated nuclear fuel without having the licence required pursuant to Section 7, paragraph (1), sentence 1, also in conjunction with paragraph (5), sentence 1;

2a. uses a measuring device contrary to the provisions of Section 7, paragraph (1a), sentence 4;

2b. fails to install, or to install correctly or promptly, fails to connect, or to connect correctly or promptly, fails to handle, or to handle correctly, or fails to maintain, or to maintain correctly, a measuring device, contrary to the provisions of Section 7, paragraph (1a), sentence 5;

2c. fails to have checked, or to promptly have checked, or fails to have certified, or to promptly have certified, the status of the measuring device or the quantity of electricity generated, contrary to the provisions of Section 7, paragraph (1a), sentence 7;

2d. fails to give notification, or fails to give accurate or complete or prompt notification, fails to transmit this, or fails to transmit it correctly, completely or promptly, or fails to submit, or to promptly submit, a result or a test certificate, contrary to the provisions of Section 7, paragraph (1c), sentence 1, Nos. 1 or 2, or sentence 2;

2e. fails to give notification, or fails to give correct or complete or prompt notification, contrary to the provisions of Section 7, paragraph (1c), sentence 1, No. 3;

3. contravenes a determination pursuant to Section 13, paragraph (1), an enforceable obligation imposed pursuant to Section 17, paragraph (1), second or third sentence, or an enforceable order pursuant to Section 19, paragraph (3);

4. contravenes a statutory ordinance issued under Section 11, paragraph (1) or Section 12, paragraph (1), first sentence, Nos. 1-7 and 9-12, or an enforceable order under a statutory ordinance issued under Section 12, paragraph (1), first sentence, No. 13, to the extent that, in such statutory ordinance, reference is made to the administrative fines to be imposed under this Section with respect to certain facts or circumstances;

5. fails to carry along the licensing notice in contravention of Section 4, paragraph (5), first sentence, or the certificate referred to in Section 4, paragraph (5), second sentence, or fails to produce upon request such notice or certificate in contravention of Section 4, paragraph (5), third sentence.

(2) Offenders shall be liable to an administrative fine of up to 50 000 euros in the cases referred to in paragraph (1), Nos. 1, 2, 2a, 2b, 2c, 2e, 3 and 4, and up to 500 euros in the case referred to in paragraph (1), Nos. 2d and 5.

(3) The administrative authority as defined in Section 36, paragraph (1), No. 1 of the Administrative Offences Act shall be:

1. the Federal Export Office [*Bundesausfuhramt*] in the cases outlined in paragraph (1), No. 4 insofar as far as the offences in question are contraventions of the compulsory licensing, notifications or other actions required under Section 11, paragraph (1), Nos. 1 or 6, in relation to the international carriage of radioactive material or a contravention of another associated provision;

2. the Federal Office for Radiation Protection [*Bundesamt für Strahlenschutz* – BfS] in the cases outlined in paragraph (1), Nos. 2a-2e.

Sections 47 and 48 (Repealed)

Section 49

Confiscation

Adopted: 22 April 2002

If a wilful administrative offence is committed as referred to in Section 46, paragraph (1), Nos. 1, 2, 3 or 4, any object,

1. to which the administrative offence relates, or

2. which was used or intended to be used to commit or prepare the offence

may be confiscated.

Sections 50-52 (Repealed)

Chapter 6

FINAL PROVISIONS

Section 53

Registration of damage due to unknown causes

Adopted: 29 October 2001

Damage which, in the light of the state of the art in science, has been caused by the effects of radiation emitted by radioactive material, but cannot be traced to any originator, shall be registered with and investigated by the Federal Ministry responsible for nuclear safety and radiation protection.

Section 54

Promulgation of statutory ordinances

Adopted: 3 May 2000

(1) Statutory ordinances under Sections 2, 9g, 11, 12, 12b, 12c, 13, 21, paragraph (3), 21a, paragraph (2), 21b, paragraph (3), and 23, paragraph (3), shall be promulgated by the Federal Government. The same shall apply to statutory ordinances under Section 10 to the extent exemptions are granted from the requirement of a licence pursuant to Section 7. The remaining statutory ordinances provided for herein shall be promulgated by the Federal Ministry responsible for nuclear safety and radiation protection.

(2) The statutory ordinances shall require the consent of the *Bundesrat*. This shall not apply to statutory ordinances whose only purpose it is to replace by other limits the physical, engineering and radiation-biological limits specified in statutory ordinances promulgated under Sections 11 and 12.

(3) The Federal Government may, by statutory ordinance, delegate all or part of the powers referred to in Sections 11 and 12 to the Federal Ministry responsible for nuclear safety and radiation protection.

Section 55 (Waived)

Section 56

Licences granted under *Länder* law

Adopted: 15 July 1985

(1) Any licence, exemption or consent granted under *Länder* law for the erection and operation of installations as defined in Section 7 shall continue to be effective. They shall be equivalent to licences granted pursuant to Section 7, and the associated obligations shall be equivalent to the obligations imposed pursuant to Section 17, paragraph (1). To the extent a licence issued under *Länder* law is associated with stipulations relating to the provision, by the operator of the installation, of financial security covering the legal liability for compensations, such stipulations shall constitute, subject to the provisions of paragraph (2) below, determinations as defined in Section 13, paragraph (1).

(2) The financial security to be provided by the operator of an installation shall be determined by the administrative authority [Section 24, paragraph (2)] within three months after this Act has taken effect; Section 13, paragraph (1), second sentence, second part of the sentence, shall apply accordingly. If a guarantee is fixed under Section 13, paragraph (4), such guarantee shall have retroactive effect as of the date this Act has come into effect.

Section 57

Limitations

Adopted: 27 July 2001

The Explosives Act and the statutory provisions promulgated on the basis of this Act, together with any provisions of *Länder* law in the field of explosives, shall not apply to the handling of nuclear fuel.

Section 57a

Transitional provision on the occasion of the unification of Germany

Adopted: 22 April 2002

(1) For licences, permits and approvals granted until 30 June 1990, in the area referred to in Article 3 of the Unification Treaty, the following shall apply:

1. Licences and permits for nuclear power plants shall become invalid upon the expiration of 30 June 1995, those for the carriage of radioactive material upon the expiration of 30 June 1992, and all other licences, permits and approvals, except the licences, permits and approvals pursuant to No. 4, upon the expiration of 30 June 2005, unless these licences, permits and approvals provide for shorter time limits; the licences, permits and approvals which are subject to the above time limits are deemed to be licences granted under the corresponding provisions of this Act and of the statutory ordinances

promulgated hereunder. A licence for a major alteration of an installation or its operation as defined in Section 7, paragraph (1), shall leave a licence granted pursuant to the first sentence unaffected insofar as the licence refers to parts of the installation which are not affected by the alteration.

2. Section 18 shall not apply to licences which continue to be valid for a certain period of time as provided for in No. 1 above if the licensee is a legal entity which is subject to the Act for the Privatisation and Reorganisation of State-Owned Property (Trusteeship Act) of the German Democratic Republic of 17 June 1990 (GBl. I, No. 33, p. 300).

3. In the case of a conversion of legal entities on the basis of the Trusteeship Act of the German Democratic Republic, the licences, permits and approvals granted shall continue to be valid for the periods of time pursuant to No. 1, insofar as an order for such continued validity has not yet been issued at the time the accession becomes effective; the responsible authority shall examine within a reasonable period of time whether the new operator guarantees the continuation of the erection and operation of the installation or of the practice by means of administrative measures and the provision of equipment and personnel. Section 18 shall not apply.

4. The consents contained in licences, permits and approvals for the acceptance of further radioactive waste or for the storage thereof for the purpose of final disposal, or for the acceptance of further nuclear fuel or other radioactive material for the purposes of storage or custody:

   a) for the acceptance of further radioactive waste or for the storage thereof for the purposes of final disposal; or

   b) for the acceptance of further nuclear fuel or other radioactive material for the purpose of storage or custody shall become ineffective as per 27 April 2002; otherwise, these licences, permits and approvals;

shall continue to exist in accordance with the provisions of this Act. The licences continuing to exist in accordance with sentence 1 may be amended in line with the provisions of this Act, or directives may be added thereto.

(2) On and after 1 July 1992, carriages of radioactive material which have so far not required any licence in the area referred to in Article 3 of the Unification Treaty shall be subject to the licensing provisions of this Act and the statutory ordinances promulgated hereunder.

Section 58

Transitional provisions

Adopted: 22 April 2002

(1) Section 4, paragraph (2), No. 7, Section 9a, paragraph (2), sentences 3-5, and Section 19a shall not apply to installations which are no longer in operation as per 27 April 2002. Section 9a, paragraph (2), sentence 3, shall not apply to installations having adequate interim storage

facilities at the site, which have been approved in accordance with Section 6 or Section 7, as per 27 April 2002.

(2) Section 5, paragraphs (2) and (3), shall not apply to nuclear fuel which is already in government custody as of 27 April 2002, whose surrender to the responsible authority by recognised non-profit-making research institutions has been notified in writing prior to 1 May 2001, or whose transfer has been contractually agreed prior to 1 May 2001. With effect from 1 January 2003, Section 5, paragraphs (2) and (3), shall apply to nuclear fuel from recognised non-profit-making research institutions.

(3) Section 7c and Section 23, paragraph (1), No. 4a, in the valid version up until 26 April 2002 shall continue to apply to any administrative proceedings pending up until that date.

(4) Section 21, paragraph (1a), shall also apply to any administrative proceedings pending as per 11 May 2000, where the costs have not yet been fixed by that date.

Section 58a

Transitional provision relating to the environmental impact assessment

Adopted: 27 July 2001

Section 2a shall only apply to projects to which the Act on Environmental Impact Assessments in the version which entered into force on 3 August 2001 is applicable.

Section 59 (Effective date)

Appendix 1

Definitions Pursuant to Section 2, paragraph (4)

Adopted: 6 April 1998

(1) The terms set forth below shall have the following meanings:

1. "nuclear incident": any occurrence or succession of occurrences having the same origin which causes damage, provided that such occurrence or succession of occurrences, or any of the damage caused, arises out of or results either from the radioactive properties, or a combination of the radioactive properties with toxic, explosive or other hazardous properties of nuclear fuel or radioactive products or waste, or from ionising radiation emitted by any source of radiation inside a nuclear installation;
2. "nuclear installation": reactors other than those comprised in any means of transport; factories for the manufacture or processing of nuclear substances, factories for the separation of isotopes of nuclear fuel, factories for the reprocessing of irradiated nuclear fuel; installations for the final disposal of nuclear material; facilities for the storage of nuclear substances other than storage incidental to the carriage of such substances; two or more nuclear installations of one operator which are located on the same site shall, together with any other premises on that site where radioactive material is held, be treated as a single nuclear installation;
3. "nuclear fuel": fissionable material in the form of uranium metal, alloy, or chemical compound (including natural uranium), and plutonium metal, alloy, or chemical compound;
4. "radioactive products or waste": radioactive material produced in or made radioactive by exposure to the radiation incidental to the process of producing or utilising nuclear fuel, but does not include:
    a) nuclear fuel;
    b) isotopes outside a nuclear installation which have reached the final stage of fabrication so as to be usable for any industrial, commercial, agricultural, medical, scientific or educational purpose.
5. "nuclear substances": nuclear fuel (other than natural and depleted uranium) and radioactive products and waste;
6. "operator of a nuclear installation": the person designated or recognised by the competent authority as the operator of that installation.

(2) The term Special Drawing Rights as used herein shall mean the Special Drawing Rights of the International Monetary Fund (BGBl. 1978 II, p. 13) as used by it for its own operations and transactions.

Appendix 2

Allowances for Legal Liability and Financial Security

Adopted: 15 July 1985

Section 4, paragraph (3), Section 4b, paragraph (2), and Section 25, paragraph (5), shall apply to nuclear fuel or nuclear substances the activity or quantity of which,

1. in a single consignment or package, or

2. at a single business or independent branch or, in the case of persons not engaged in business, at the place of the applicant's practice,

does not exceed 10^5 times the allowance and which, in the case of enriched uranium, does not contain more than 350 grams of ^{235}U. The allowance shall be the activity or quantity up to which the handling of such nuclear fuel or material does not require a licence or notification hereunder or under a statutory ordinance issued hereunder.

Appendix 3

Quantities of Electricity Pursuant to Section 7, paragraph (1a)

Adopted: 22 April 2002

Installation	Residual electricity volumes (TWh net) as of 1 January 2001	Start of commercial operation
Obrigheim	8.70	01.04.1969
Stade	23.18	19.05.1972
Bliblis A	62.00	26.02.1975
Neckarwestheim 1	57.35	01.12.1976
Biblis B	81.46	31.01.1977
Brunsbütte 1	47.67	09.02.1977
Isar 1	78.35	21.03.1979
Unterweser	117.98	06.09.1979
Philippsburg 1	87.14	26.03.1980
Grafenrheinfeld	150.03	17.06.1982
Krümmel	158.22	28.03.1984
Gundremmingen B	160.92	19.07.1984
Philippsburg 2	198.61	18.04.1985
Grohnde	200.90	01.02.1985
Gundremmingen C	168.35	18.01.1985
Brokdorf	217.88	22.12.1986
Isar 2	231.21	09.04.1988
Emsland	230.07	20.06.1988
Neckarwestheim 2	236.04	15.04.1989
Summe	2 516.06	
Mülheim-Kärlich*	107.25	
Total	2 623.31	

* The quantity of electricity listed for the nuclear power station Mülheim-Kärlich of 107.25 TWh may be transferred to the nuclear power stations Emsland, Neckarwestheim 2, Isar 2, Brokdorf, Gundremmingen B and C, and also (up to the amount of 21.45 TWh) to the nuclear power station Biblis B.

Appendix 4

Safety Review Pursuant to Section 19a, paragraph (1)

Adopted: 22 April 2002

Installation	Date
Obrigheim	31.12.1998
Stade	31.12.2000
Biblis A	31.12.2001
Biblis B	31.12.2000
Neckarwestheim	31.12.2007
Brunsbüttel	30.06.2001
Isar 1	31.12.2004
Unterweser	31.12.2001
Philippsburg	31.08.2005
Grafenrheinfeld	31.10.2008
Krümmel	30.06.2008
Gundremmingen B/C	31.12.2007
Grohnde	31.12.2000
Philippsburg 2	31.10.2008
Brokdorf	31.10.2006
Isar 2	31.12.2009
Emsland	31.12.2009
Neckarwestheim 2	31.12.2009