

**NUCLEAR
LAW
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Supplement

June 1997
Nuclear Energy Agency
Organisation for Economic Co-operation and Development

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Comprehensive Ban on Nuclear Tests

by Joëlle Bourgois*

The topic "Comprehensive Ban on Nuclear Tests" paraphrases the Treaty of the same name, the Comprehensive Nuclear Test Ban Treaty (CTBT)** , open for signature on 24 September 1996

Such a title raises two questions: does the CTBT succeed in banning nuclear tests? Is the ban comprehensive? These two questions may be used to fuel debate and justify learned expositions from lawyers. However, the answer is easier than it might appear. One only needs to ask which signatory country would today feel able to provoke the international community to the point of carrying out a nuclear test.

Signature of the CTBT is thus a landmark in the history of nuclear disarmament.

I NEGOTIATIONS OF AN EXCEPTIONAL NATURE

Negotiation of the CTBT appears exceptional from the historical, political and procedural standpoints.

1.1 Historical Standpoint

The conclusion of the negotiations put an end to 40 years of discussion which began with J. Nehru's call in 1954 and continued in the various incarnations of what was to become the Conference on Disarmament, broadened in 1996 to include 61 Member States.

In terms of key dates, the indefinite extension of the Nuclear Non-Proliferation Treaty (NPT) in May 1995 probably marks the turning point between the two principal phases of the negotiations.

The first phase, starting in January 1994, represents a sort of dress rehearsal. After only a few months, on a Mexican initiative, a number of States endeavoured to have a draft Treaty adopted. Shortly thereafter, the United States insisted on concluding before the date scheduled for the Review Conference and extension of the NPT. At that time, in the absence of a consensus, a preliminary draft was drawn up incorporating the first very few points of agreement together with other various alternative proposals. The extent of disagreement can be seen from the fact that there were more than 1 000 sets of square brackets.

* Joëlle Bourgois is Ambassador and Permanent Representative of France to the Conference on Disarmament. The ideas expressed and the facts contained in this Article are the responsibility of the author alone.

** The text of the Treaty as well as a note discussing its negotiation were published in *Nuclear Law Bulletin* No. 58.

Negotiations intensified as from May 1995, first of all along classical lines on the basis of the preliminary draft, until 28 March 1996 Attention was then focused on a complete text proposed by the Chairman of the ad hoc Committee But the negotiations only really ended with the voting of the Resolution adopting the draft Treaty at a special meeting of the General Assembly of the United Nations on 10 September 1996

1.2 Political Standpoint

Many crucial elements and events helped give a special character to the history of the negotiations of a comprehensive ban on nuclear tests

This applies to the different categories of States confronting each other in the negotiations The most obvious is the classical distinction, arising from the NPT, between nuclear-weapon-States (NWSs) and non-nuclear-weapon States, others included the five NWSs and the three threshold States, the North and the South, and the three geographical groups of the Disarmament Conference the Western countries, the countries of Central and Eastern Europe, and the so-called group of 21, comprising the non-aligned countries

But there is also a way of categorising the States involved which creates permanent communication across all these groups, with alliances and collaborations which are often at first sight, somewhat disconcerting, such as that between India and Pakistan The idealists, who could also be described as ideologists, want a better world immediately, something which is obviously not possible The realists, sometimes described as cynics, say that "the best is the enemy of the good" The perfectionists have all the time in the world, China long proclaimed that the duration of the negotiations was of no importance, what was important was to have "a good Treaty" Iran was still saying on 24 August 1996 that the Treaty was not yet ready for signature and that further negotiations were required to improve it Lastly, the troublemakers, for various reasons, complicate matters causing precious time to be lost and sometimes bringing the negotiations to the brink of breakdown

Within this framework, the friends of the Treaty often act as initiators and catalysts and are to be found in all regions and all geopolitical categories Australia is in the front line but some were surprised to find France there also as from June 1995

Important outside events affected the negotiations in Geneva Paradoxically, completion of the French nuclear tests was to stimulate general interest in the negotiations The Indian elections of 1996 confirmed that India no longer considers the Treaty as being in its interests The re-election of President Yeltsin in July 1996 allowed the Treaty to get off the ground The United States electoral calendar will gradually come to be seen as a time frame

1.3 Procedural Standpoint

This third special feature is the consequence of the two others, and is used to ease the difficulties of the Conference on Disarmament

In a similar way to the Chemical Weapons Convention, adopted in 1993 the CTBT was concluded following an initiative of the Chairman of the ad hoc Committee and on the basis of a text drafted under his authority with a limited number of versions, from the structure itself of the Treaty to an ordered and complete text without any square brackets The last version presented on

28 June 1996, suffered almost no further changes except as regards the number of affirmative votes from countries needed to trigger an on-site inspection

The negotiations, however, did not develop in the same way. In the case of the Chemical Convention, negotiations were concluded in Geneva and while all countries were not in agreement with the finalised text, none opposed its being transferred to New York for adoption by the General Assembly of the United Nations.

In the case of the CTBT, the Geneva phase ended with a triple Indian veto. India announced that it would not be a party to this Treaty, and protested violently against an entry into force clause an essential element of which was ratification by States with a nuclear capacity, of which India is one. It therefore objected to the text being transmitted to New York, and even to transmission of the draft Treaty of the Conference on Disarmament ad hoc Committee. Lastly, India objected to the report of the Conference on Disarmament, which merely listed disagreements but referred to the text of the Treaty, being sent to New York.

The final procedure was therefore somewhat unusual. Belgium, in Geneva, and Australia, in New York, "adopted" the orphan draft Treaty, the former by giving an official character to the Geneva working document, and the latter by proposing the adoption of the text by the General Assembly of the United Nations.

This approach was approved by 158 votes in favour against only three votes against (India, Bhutan and Libya) with five abstentions (Cuba, Tanzania, Syria, Lebanon and Mauritius).

II. AN INNOVATIVE TREATY

The two and a half years of negotiations brought certain innovations to this Treaty in the manner of reconciling non-proliferation and nuclear disarmament, of combining technical solutions and legal instruments, and in the quest for a balance between protection and intrusion, and between the role of national governments and that of the CTBT Organisation.

2.1 Non-Proliferation and Nuclear Disarmament

The goals of non-proliferation and those of nuclear disarmament are increasingly presented in an antagonistic fashion in the international fora in which these issues are addressed. The CTBT attempts to reconcile them in several ways.

The rather short Preamble clearly puts the emphasis on nuclear disarmament, words which appear in nearly every sentence. However, the language used is not very different from that already approved, notably by the nuclear powers. The new element is contained in paragraph 6 which refers to nuclear disarmament being achieved gradually and systematically, thus recognising that it can be useful in this field to proceed by stages.

The classical terminology of non-proliferation is little used, but the two themes are reconciled in a new aspect, described by some as vertical non-proliferation, by posing the question of the qualitative improvement of weapons. Paragraph 5 of the Preamble recognises that the CTBT will constrain the development and qualitative improvement of nuclear weapons and end the development of new even more advanced types of weapons.

Thus, under cover of vertical non-proliferation, the Treaty analyses the practical consequences regarding the control and development of weapons

Horizontal non-proliferation on the other hand, all but absent from the Preamble reappears in the entry into force clause which is entirely focused on keeping a tight rein on the so-called nuclear threshold States (India, Pakistan and Israel)

2.2 Combination of Technical Solutions and Legal Instruments

The scope of the Treaty, built upon the Australian formulation, commits each State Party not to carry out any nuclear weapon test explosion or any other nuclear explosion. The drafting is simple but has given rise to fundamental questions

First of all, what does the word "test" cover? Does it mean what everyone has always thought it to mean for decades or something more complex, which certain disarmament experts would like including all sorts of experimental and scientific activities

While the clause itself does not clarify this point, light has been thrown on its very simple wording by the, often public, debates which have taken place as to its meaning. Threshold test explosions, under discussion until the summer of 1995, which release a quantity of nuclear energy lower than a given threshold, such as hydronuclear experiments, are banned. This was clearly established by the zero option concept which France introduced at the Conference on Disarmament on 10 August 1995

Activities such as Inertial Confinement Fusion (ICF) are not, on the other hand, prohibited. This is clear from the 1963 Moscow Treaty prohibiting the testing of nuclear weapons in the atmosphere, outer space and under water, the scope of which is described in the same terms. It is also clearly expressed in the interpretative declaration which Germany deposited when signing the Treaty on 24 September 1996, and perhaps in other declarations which States like Japan will want to make upon ratification

Similarly, simulation activities are not prohibited. These include physical research, numerical calculations and laboratory experiments carried out on a repetitive basis and designed to guarantee the safety and reliability of nuclear weapons. They also include hydrodynamic experiments without nuclear materials and so-called sub-critical experiments during which nuclear materials remain passive, i.e. do not give rise to a self-sustaining nuclear chain reaction

However, the wording of this clause also means that so-called peaceful nuclear explosions, long defended by China, are not allowed. This is clear from Article VIII which provides that the Conference of the States Parties, when reviewing the operation of the Treaty every ten years, may consider the possibility of permitting such explosions if, and only if, all the States Parties agree and once the Treaty has been amended accordingly

The verification regime is another good example of the novel way in which technical solutions and legal solutions have been combined

The regime is extremely complex, taking up most of the hundred or so pages comprising the Treaty and the work to be carried out by the preparatory Commission in Vienna to set up the system will need a very high degree of expertise

Thus the International Monitoring System is to be made up of four different networks (seismological, hydroacoustic, infrasound and radionuclide monitoring), using 321 facilities throughout the planet, on land and sea, linked to an International Data Centre, aimed at detecting in real time and at a distance, any incident in the air, on land, underground or under the sea which could constitute a breach of the Treaty. Thus the Treaty's scientific support system will inform the States Parties immediately of any suspicious event anywhere in the world.

Other examples of the combination of legal and technical solutions include the procedures for carrying out inspections by land and air.

In the final analysis, it is the whole range of such combinations which has given practical effect to the idea of an international and effective verification regime included in the negotiation mandate for the Conference on Disarmament.

The entry into force clause is the third point I would like to mention. This clause has given rise to much controversy and even a certain crisis of conscience on the part of the negotiators.

Two extreme solutions were proposed: the first was to agree on a number of ratifications required for the Treaty to enter into force, a quite different suggestion was that several States be chosen which, for one reason or another, were of particular importance and ratification by which would be required for the Treaty to enter into force.

This is a quite classical legal debate and is perfectly illustrated by the difference in the solutions adopted for the Chemical Convention and for the CTBT.

In the former case, a simple numerical formula was chosen, the results of which are now clear: the Chemical Convention has been ratified by 65 States and thus entered into force automatically in April 1997 whatever the result of the ratification process of the two chemical-weapon States, the United States and the Russian Federation.

This leads one to think that, we were perhaps right, in spite of our hesitations, to adopt the second, realistic solution taking account of the fact that the Treaty would not work if all the States with significant nuclear capacity were not Parties. Thus, the complex definition of the 44 States, Members of the Conference on Disarmament having participated in the negotiations and possessing, according to IAEA records, a power or research reactor.

The nuclear-weapon States and the threshold States are thus included.

Choosing which approach to adopt for the CTBT was a problem throughout the negotiations. It became more difficult still when India announced on 20 June 1996 that it would not be a Party to the Treaty which no longer served its interests. When developments are unpredictable, solutions are chosen in the abstract. But when it is known from the outset that a State whose presence is deemed indispensable will not sign or thus ratify in the short term, the choice becomes a veritable dilemma.

That is why France, and also the United States, proposed a middle solution such as a derogation clause maintaining the objective of non-proliferation but allowing, in the final analysis, the entry into force of the Treaty if this did not prove possible by applying the principal clause alone.

These proposals were not accepted and the negotiators provided simply, in Article XIV relating to entry into force, for an annual meeting of a Conference of those States which have ratified the

Treaty, the first of which will be in September 1999, in order to examine measures which could be taken in accordance with international law to accelerate the process of entry into force

2.3 Points of Equilibrium

The third novel feature of the Treaty is to have found new points of equilibrium between protection and intrusion, and also between the role of the Organisation of the Treaty and that of the States Parties. These can be more quickly described since they are relatively clear from a reading of the text itself.

A good illustration of the first point is to be found in the verification regime, in particular in the concept of on-site inspections as applied to nuclear tests. An examination of the complex mechanism of inspections reveals that there is an extremely high potential for intrusion since, as pointed out by the Chinese Ambassador in the middle of the negotiations, the Lob-Nor test site is not Disneyland¹.

For example, the time limits for intervention are extremely tight, especially given that inspections are to remain exceptional: 6 days maximum between the deposit with the Executive Council of an inspection request by a State and the arrival of the inspection team at the point of entry of the territory of the State to be inspected, and 9 days maximum between this request and the beginning of technical inspection activities in the zone under suspicion, the area of which must not exceed 1 000 km².

But several types of safeguard have been provided for, not only in the decision-making mechanism of the Executive Council, the green light, 30 affirmative votes from among the 52 Members of the Council required to authorise the inspection, but also in the conception of inspections which take place in several phases. Each phase has a greater intrusive potential than the previous one, the first one including neither all the inspection technologies nor access to installations or premises.

Another new feature is the division of powers between the Organisation and the States. One example with regard to the verification regime is that the right to make a judgement on the nuclear character of an incident detected by the Organisation's international monitoring system and consequently to request an inspection, belongs to the States.

Today, several months following the conclusion of the negotiations, and despite the amnesia which has rapidly set in with regard to nuclear tests and the banning thereof, the Treaty appears to be both a diplomatic and political success. Four months after its adoption by the General Assembly of the United Nations, the Treaty has been signed by 139 States, including 41 of the 44 countries whose ratification is necessary for its entry into force.

The Treaty exists. The Preparatory Commission set up on 19 November 1996 is operating and is to draw up a universal and particularly complex verification regime.

In sum, the CTBT is an enterprise which is constantly evolving for reasons connected both to its intrinsic development, particularly that of signatures and ratifications, and to the environment in which it will operate if other relevant political or legal factors come into play such as, for example, negotiation of a Treaty banning the manufacture of fissile materials for use in nuclear weapons or other nuclear devices.

Reflections on Liability and Radiological or Nuclear Accidents: The Accidents at Goiania, Forbach, Three Mile Island and Chernobyl*

by Marie-Claude Boehler**

INTRODUCTION

When it comes to trying to reduce the consequences of a radiological or nuclear accident¹, what is basically required of the law is to make sure that liability is sanctioned, in particular by equitable and sufficient compensation for the damage caused. Accidents, of course, give rise to damage, which is sometimes irreversible and perceived as irreparable, inasmuch as *restitutio in integrum* is impossible. Nevertheless, when damage has occurred, sanctioning the person liable helps

- to compensate, as far as is possible, for the shortcomings of the safety system,
- to constitute, at the same time, a means of promoting the effectiveness of this system. There is obviously a close link between compensation and prevention. By its dissuasive nature and the penalising of the author of the damage, one of the merits of compensation is to make firms pay closer attention to safety and the prevention of accidents, and
- to restore confidence in the future on the part of victims of an accident and to maintain confidence among the general public.

The seeking out and punishing of the person liable are of fundamental importance to those who have, or fear to have, suffered the consequences of an accident. Whether liability is objective and "no fault", or whether it is conditional upon fault, punishing the offender is always an essential condition in restoring public confidence. Establishing liability is also an opportunity for victims, and more broadly, society, to call for greater care and vigilance in the future from decision-makers and implementers, over and above claims for compensation.

On the basis of the lessons we have learned today from, amongst others, the radiological accidents of Goiania in 1987 and Forbach in 1991, as well as the nuclear accident at Three Mile Island (TMI) in 1979, this article tries to make a distinction between problems of liability linked, on the one hand, to the sanctioning of the absence of prevention implied by the occurrence of non-stochastic

* This paper was presented at the Colloquium on Liability in the Nuclear Field, organised in Poitiers, France on 10 and 11 March 1997 by the *Societe Francaise Nucleaire* and the International Nuclear Law Association. To mark the occasion, a special issue of the *Revue Generale Nucleaire* is to be published which will include this paper.

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1 A distinction is made here between radiological accidents, which occur when radioactive sources are being used for industrial or medical purposes, and nuclear accidents, which occur in nuclear installations (for example nuclear reactors or reprocessing plants).

effects² and, on the other hand, to the judicial sanctioning of the failure of precautionary measures taken, as regards stochastic effects³ Lastly, over and above the type of damage compensated liability also gives rise to some thoughts, in light of the experience of Chernobyl, about the impact of modes of compensation on the management of post-accident situations in areas affected over the long term by persisting contamination and the radiological risk associated with it

I THE GOIANIA AND FORBACH ACCIDENTS

When the effects caused by accidental exposure to ionising radiation are non-stochastic threshold doses must have been exceeded, thus causing the accident Normally compliance with the elementary rules of radiation protection is enough to maintain exposure below the threshold levels at which such effects appear In the case of accidents leading to non-stochastic effects liability is thus based on the absence of prevention, and the fault arises because those responsible should in the circumstances, have been aware of the situation It is liability of this type which the courts found in the accident of medical origin at Goiania and in the Forbach accident which occurred in the industrial sector

Findings of criminal and civil liability⁴ of those in charge were based on the fact that through their negligence, the sources involved could prove particularly dangerous and cause accidents with serious health consequences The facts which led to the accidents at Goiania and Forbach confirm that the persons responsible were guilty of negligence in not complying with the rules of radiation protection designed to prevent accidents, but also show the particular control problems to which such sources can give rise

1.1 Facts Establishing the Negligence of Those in Charge

The facts leading directly to the criminal and civil sentences imposed on those in charge of the radioactive sources in question are indeed damning In Goiania in May 1985 when moving their private radiotherapy clinic into new premises, the doctors in charge left in an enclosed but unprotected area in their old premises, a sealed teletherapy source of Cesium 137, registered with the CNEN (National Nuclear Energy Commission) in 1974 They did not tell the Commission about either the transfer of the clinic or the abandonment of the Cesium source In May 1987, on the orders of one of the doctors who owned the clinic, the building was partially destroyed, and as a consequence became very easily accessible to third parties No measures were taken to prevent contact with the source Thus, in September 1987, two persons from a scrap-iron firm were able, without any difficulty to enter the premises and take away the cylinder containing the device's irradiation head⁵, to which many persons were then exposed At the end of September 1987, the accident was discovered when several

2 Non-stochastic effects are those which inevitably and in quasi-identical fashion manifest themselves in all exposed individuals when threshold doses have been exceeded Doses capable of giving rise to such effects must be higher than 0.5 Sv (or 500 mSv) and delivered within a few hours

3 Stochastic or uncertain effects are those which appear in respect of only some of individuals who have been accidentally exposed, for example radiation-induced cancers

4 In the case of accidents which occur as a result of the use of radioactive sources in the industrial or medical fields the question of sanctions is raised with regard to the authors of the incident (criminal liability) as well as the problem of compensation for damage suffered by the victim (civil liability) It is important to note that these accidents are not covered under the no-fault nuclear third party liability regime which derogates from general tort law as evidenced by the international conventions, which cover damage to persons and property caused by incidents at nuclear installations

5 The source activity was at that time 50.9 TBq (1375 Ci) and delivered at a distance of 1 metre a dose rate of 4.26 grays per hour

such persons began to show signs of severe exposure. Some 20 individuals, half of them seriously affected, were identified as having been exposed to high doses. Between 23 October and 28 October 1987, four of them (including a 6 year old child) died as the result of severe multiple effects.

In Forbach, in August 1991, in order to make repairs, three temporary employees entered several times into the defective conveyor of the particle accelerator of a company specialising in Teflon conversion by ionisation. The directors of the company did not inform them of the risks they were running and did not take the necessary measures for their safety. They were exposed over a long period to ionising radiation which caused serious bodily injuries. They suffered second and third degree burns as well as serious psychological problems.

1.2 Criminal Liability

Following these two accidents, criminal proceedings were brought against those in charge. In the case of the Goiânia accident, proceedings were brought in December 1987 against the doctors concerned for manslaughter and the causing of unintentional injury. An appeal was lodged against the decision of the court of first instance, handed down on 29 July 1992, before the Federal Regional Court of the First Region, which gave judgment on 19 June 1996. Following the Forbach work accident, the Chairman, and Managing Director, the Director and the Technical Adviser of the company were sued for failing to comply with the legislation on health and safety at work and for causing unintentional injury. The Sarreguemines Criminal Court handed down its judgment on 29 June 1993. On 17 February 1994, the Court of Appeal of Metz partly overturned the decision of the court of first instance.

In both cases, the courts decided, in light of the report on the facts, that the non-compliance by those in charge with safety rules and their negligence as regards prevention alone constituted the exclusive and direct cause of the serious accidents which occurred. The other causal elements in the Goiânia accident, such as the unfortunate actions of the victims, were held not to break the causal chain between the initial negligence of the doctors – namely the abandonment of the equipment and the absence of information given to the CNEN – and the accident. The above-mentioned omissions were the exclusive cause of the accident. The criminal liability of the accused resulted from the non-performance of their duty of care in safeguarding the equipment, all the more important in that the persons concerned, all nuclear medicine experts, were perfectly well aware of the objective and ongoing risk represented by the abandonment of their radiological equipment on the clinic's former premises. The failure to act with due care was clear: they were bound, and able, to act in such a way as to avoid the outcome which, in the circumstances, was foreseeable. They were thus guilty of objectively negligent conduct in accordance with the Brazilian Penal Code of 1969 which provides that

any person who failing to show the care, attention or conscientiousness he is bound to show in light of the circumstances does not foresee the outcome or, if he does foresee it supposes unreasonably that it will not happen or that he will be able to prevent it, shall be guilty of negligence”

Such emphasis on the way in which these radiotherapists acted is evidence of the court's desire to place the entire responsibility for the accident on them, stressing in particular the unacceptable nature and culpability of the behaviour of trained professionals who were aware of the potentially serious risks to which their negligence could expose third parties. The court did not hesitate to describe in “diabolical” terms the radioactive source as misused by the doctors concerned: “the device,

used since 1970 for beneficial purposes, suddenly became a terrible and uncontrolled force for evil. Thus, the court sentenced four of the doctors to 3 years and two months of privation of freedom, eight months of which represented the penalty for non-compliance with a technical rule of the profession. The fifth doctor who, by ordering the clinic to be demolished, helped cause the accident was sentenced to 1 year and two months' detention⁶

In the Forbach accident, the existence of a known and foreseeable risk together with the clear breach of detailed legal provisions designed to avoid the risk meant that here also, the non-stochastic effects noted were certainly preventable. The directors of the company concerned were found guilty on the one hand of breaches of the law on health and safety at work, especially, and for the first time in France of the Decree of 2 October 1986 as amended relating to the protection of workers outside basic nuclear installations⁷, and on the other hand of breaches of the general criminal law, and more precisely of the offences of unintentionally causing injury through negligence, carelessness and non-compliance with the regulations.

As regards the numerous breaches of the 1986 Decree as amended, the director was found guilty of failing to take the safety measures normally required of an employer⁸. He neglected to have the electric radiation generator checked by an approved body before being brought into service, to define a monitored area and a controlled area around the source of ionising radiation, to ensure the protection of workers against external exposure, in particular to mark by physical obstacles, a parameter around the source which was not to be crossed while it was functioning, to arrange for the training and information of workers exposed to radiation, to appoint a person competent in radiation protection and to provide notice of possession of the generator to the Work Inspectorate (who then transmits the information to the Board for Protection against Ionising Radiation, or OPRI).

The guilt of the chairman and managing director was established not in relation to what he should have done as a minimum, namely to comply with elementary safety precautions, but to what he was supposed to do as a "maximum", namely to comply with the principle of optimisation by reducing exposures as low as reasonably possible below dose limits⁹. The reference made by the judge to the principle of optimisation in a situation in which non-stochastic effects appeared gives rise to a serious reservation: this principle is supposed to meet the requirements developed by the ICRP to deal with stochastic effects. It is an attempt to reduce exposure below dose limits to an acceptable residual level, with a view to preventing the appearance, not of non-stochastic effects, but of stochastic ones, to low doses of radiation.

The Brazilian court did not make the same mistake and made no reference to the principle of optimisation in its judgment in the Goiânia accident case. In these circumstances, invoking the optimisation principle seems all the less appropriate in the context of the non-stochastic effects which appeared after the Forbach accident. No doubt the French judges referred to the principle of

6 These sentences were served by the five doctors in an open system, i.e. they exercised their profession during the day and spent their nights and days off in prison, called somewhat euphemistically by the judges' house of welcome. This measure was taken by the courts to allow the culprits to carry out their family obligations and to treat their patients since they were the only radiotherapists in the region.

7 There was also an important breach of the provisions governing temporary work. The temporary employees at Forbach had carried out work involving exposure to fluorine gas and hydrofluoric acid, although such work was listed in the Order of 27 June 1991 as particularly dangerous and forbidden to temporary workers.

8 The chairman and managing director had delegated authority for matters of health and safety at work to the director in question, who thus assumed responsibility for the obligations imposed by the 1986 Decree on the employer.

9 The principle of optimisation is defined in the Section of the Decree of 2 October 1986 in the following terms: equipment, procedures and the organisation of work must be designed in such a way that individual and collective occupational exposures are kept as low as is reasonably possible below established annual exposure limits.

optimisation in order to punish the negligence of those in charge¹⁰ by adopting the qualitative approach inherent in the optimisation principle, notably as regards the organisation of work.

Given the considerable exposures which caused the non-stochastic effects, the French criminal court, like the Brazilian court in the Goiama case, should have rejected the criminal liability of the chairman and managing director except as regards the offence of causing unintentional injury through negligence. On this point, the Court of Appeal of Metz held that the chairman and managing director had been negligent in not checking, when he delegated his powers as regards safety to the director, that the regulations were being correctly applied in practice. As to the director, holding that his many breaches of the 1986 Decree had directly caused the injuries, the Court of Appeal confirmed that he should also be found guilty of the offence of unintentional injury. Although the Court of Appeal was of the opinion that "these two men therefore merited an exemplary sentence", it in fact suspended a large part of the prison sentence it passed on both of them (1 year, with eleven months suspended) and a fine of FF 20 000, while acquitting the technical adviser¹¹. Had these acts been committed after 1 March 1994, the New Penal Code would have been applicable. Heavier sentences would have been handed down not only against the natural persons involved but also against the company¹².

In neither of these cases were the public bodies in charge of control found liable. In the Goiama accident, the judge decided that there had been no failure in the control system. It is important to note that the court held that *'even if such failure had existed, that would not have caused the accident had those in charge of the clinic acted with due care in safeguarding the equipment'*. This opinion thus excludes from the causal link any failure on the part of the control authorities by making the actions of those in charge of the clinic the sole cause of the accident. In the case of the Forbach accident, this question was not raised by the court. This case shows, however, that French legislation has its "Achilles heel" as regards, in particular, the checking of electric radiation generators, since the whole system is based on the declaration of the employer. Brazil has improved its system by providing for a more solemn declaration, no longer simply to the CNEN but directly to the National Congress, and it would be possible to adopt additional provisions in France which, though more modest, could prove just as effective. It could, for example, be provided that those who sell or transfer such generators must also make a separate declaration to the Work Inspectorate.

10 It should be noted that the Court of Appeal overturned the finding that the chairman and managing director were guilty of infringing the principle of optimisation, holding that he was not personally responsible given the delegation of powers to the director for the periods during which the temporary workers were contaminated. This means that only the finding of fault was overturned by the decision and that the Court of Appeal implicitly confirmed the basis of a breach of the principle of optimisation.

11 The Court of First Instance had been stricter especially as regards the director who was sentenced to prison for twelve months (six of which were suspended) and the technical adviser who was given a suspended prison sentence of six months. The chairman and managing director were given a suspended prison sentence of one year. The 'lighter' sentence handed down by the Court of Appeal has again posed the question of how much our society requires from heads of companies as regards the obligation of safety.

12 The directors would have been punished under the New Penal Code to two years imprisonment and a fine of FF 200 000 for the offence of unintentional injury and, in the present case, probably to the heavier sentence of three years imprisonment and a fine of FF 300 000 for deliberately failing to fulfil a safety obligation. It would only have needed the Work Inspectorate to find that a third party had been put in danger for them also to have been sentenced under this new offence to one year's imprisonment and a fine of FF 100 000. The company could, in addition, have been ordered to pay a fine five times higher than that established for natural persons and to close down the establishment, or to have had imposed a temporary ban on its activities.

1.3 Civil Liability

Given the scale of injury and damage to persons and property caused by the Goiânia accident, the question was raised in Brazil whether a special civil liability system should also be introduced to cover damage caused by radioactive sources. Under the Brazilian Constitution, it is not the licence holder who bears civil liability for the damage he has caused, it is the State which is civilly liable for the acts committed by its agents or persons holding licences granted by it. To date, the State has not yet been sentenced by the courts to pay compensation in respect of its civil liability. In a first stage compensation for the most serious, immediate injuries was paid by the State not only to injured persons but also to the families of the deceased. This compensation was paid out by a Commission from the Leide das Neves Ferreira Foundation¹³ set up by the State of Goiás by an Act of 9 December 1987. There was also considerable damage caused to property and to the environment cleaned up by the State, which carried out decontamination until Christmas 1985. Clean-up operations were completed only in March 1988, with dwellings being rebuilt with financial support from the State.

Very recently, an Act of 24 December 1996 adopted by the Brazilian National Congress granted a life-time pension by way of special compensation to the victims of the Goiânia accident. Pensions were given to victims suffering partial or total permanent functional inability to work as a result of the accident, to those who had received doses equivalent or superior to 0.5 Sv, and to the descendants of persons irradiated or contaminated born with any anomaly following the proven exposure of their parents to Cesium 137. It is interesting to note that inasmuch as the non-stochastic effects at these dose levels are limited and that a cure is usually effected without any treatment, it would seem that compensation is intended to cover any future stochastic effects. The recommendations of the ICRP in its Publication No 60 are based on assumptions that give rise to an estimate of a roughly 2.5 per cent chance that an individual who has over his lifetime suffered accumulated exposure of 0.5 Sv will die from a radiation-induced cancer. The Act of 24 December 1996 thus chooses to compensate an effect which it "assumes" will occur even though statistically it has 'only' one chance in 40 of so doing¹⁴.

As for the civil consequences of the Forbach accident, since the Moselle Tribunal des Affaires sociales had, in a decision of 23 November 1994, found the employer guilty of inexcusable fault¹⁵ the directors of the company were sentenced jointly and severally to compensate on a personal basis the consequences of the damage caused to the direct victims. The worse-affected victim was awarded for damage suffered (pain and suffering, aesthetic damage and loss of comfort) total compensation of FF 1.8 million (decision of the Chambre Sociale of the Court of Appeal of Metz of 27 June 1995). An increase in the victim's work accident benefit was also granted. By penalising the serious breaches of existing radiation protection regulations, the civil consequences showed, on the one hand that a work accident can be extremely costly for the employer or management and, on the other hand the need in the field of radiation protection, to implement an effective prevention policy and control system.

13 The main task of this Foundation which bears the name of a little girl who died as a result of the accident is to assist medically and socially the direct and indirect victims of the accident and to carry out epidemiological studies related to the effects of the radiation.

14 The stochastic nature of these effects stems from the fact that it is, *a priori* impossible to predict who amongst those exposed, will develop a cancer nor *a posteriori* to say which cancers of those developed can be attributed to the radiation.

15 Inexcusable fault is defined as an exceptionally serious fault arising, in particular from a deliberate act or omission from the awareness its author should have had about the danger involved, and from the absence of any valid excuse.

II THE THREE MILE ISLAND ACCIDENT

The TMI accident gave rise to a key debate on whether, when stochastic effects appear, liability should be defined in terms of precautions. Thus, it may be that not only will persons who did not take preventive measures against known and foreseeable risks be found guilty, but also those who, in a situation of uncertainty as regards whether or not stochastic effects could arise following exposure to low doses, did not take proper precautions¹⁶ by not taking every possible care¹⁷

2.1 The ALARA Principle: The Judicial Challenge of TMI

The many difficulties, notably as regards communication, which marked the management of TMI explain in part why the accident grew into a major crisis with a high media profile, thus giving rise to a very large number of claims for compensation. Indeed, a French report by the Groupe Permanent des Réacteurs Nucléaires in August 1979 noted that the uncertainty which reigned during the first few days after the accident could have repercussions, in particular of a legal nature:

“during a conversation, Commissioner Bradford of the Nuclear Regulatory Commission (NRC) pointed out that the absence of accurate data concerning the radioactive releases during the first few days could be expected to lead to legal difficulties”

Thus, as anticipated, mainly claims for compensation for personal injury were made before the Federal Court of the Harrisburg District, on the basis of the Price Anderson Act¹⁸. These claims were grouped under the heading “*In re Three Mile Island Litigation*”. They concerned not only the emotional distress suffered and the loss in value of property but above all the effects on health particularly cancers which were “attributed” to TMI. Originally, 300 claims gave rise to compensation of several million dollars. At the time, it was thought that this would calm the situation. Unfortunately, once the compensation amounts became public knowledge, they led, on the contrary, to a surge in other claims, many from new claimants who felt that their fears as regards possible long-term health effects had been legitimised by the first compensation amounts paid. A second “wave” of 2 000 claims thus more or less submerged the Federal District Court from individuals alleging that

16 The precaution principle is described in the Barnier Act of 2 February 1995 on enhancing protection of the environment as follows: the absence of certainty having regard to current scientific and technical knowledge must not delay adoption of effective and reasonable measures to prevent the risk of serious and irreversible damage to the environment at an economically acceptable cost.

17 Confronted with the impossibility to date of proving beyond doubt the existence or non-existence of a threshold beyond which stochastic effects appear following exposure to low doses the ICRP has *in application of the precaution principle* adopted the assumption of a linear relationship without any threshold considered to be prudent. It follows from this hypothesis of linearity without any threshold that the risks of exposure to radiation should be reduced as far as possible enshrined in the optimisation principle (better known by its acronym ALARA – As Low As Reasonably Achievable) which determines the levels of exposure deemed to be socially acceptable.

18 The Price Anderson Act was adopted for the first time in 1957 and has been amended on several occasions to set up a federal system governing claims for compensation as regards civil liability in the case of a nuclear accident causing personal injury or material loss to members of the public. Protection is based on the guarantee of the availability of compensation funds. In the event of an exceptional nuclear accident in order to ensure rapid and fair compensation it provides for specific procedures such as emergency payments which may be made immediately following the accident, and states that claims for damages and interest may be submitted to a single District federal court. Thus following the recommendation by the Governor of Pennsylvania to evacuate pregnant women and pre-school-age children living within a radius of five miles a pool of private insurance companies made emergency payments of subsistence allowances to the families concerned.

they had developed illnesses and in particular cancers¹⁹ It was only 17 years later by a decision of 17 October 1995, that the Court of Appeal of the Third Circuit²⁰ brought the procedure for the compensation of damage in part to an end

The whole debate following TMI turned on the question of whether the legal duty of care was based on the principle of dose limits or that of ALARA, which obliges operators to reduce radioactive releases to as low as reasonably achievable In a first instance decision of 18 February 1994 the Federal District Court did not take into consideration the fact that no claimant had individually received a dose higher than that laid down by the Federal Code for the public at large, namely 5 mSv per year²¹ It held that according to Federal regulations, the operator is obliged to comply with the ALARA principle by maintaining exposure to ionising radiation, as well as radioactive releases to as low as reasonably achievable

In a decision of 17 October 1995, the Third Circuit Court of Appeal rejected the interpretation adopted at first instance by the Federal District Court which had held the ALARA principle to constitute a legal standard of care It followed the 1992 *O'Conner* case which held that compliance with the dose limits constitutes the only obligation of operators vis-à-vis workers and the public Thus the Court of Appeal held that inasmuch as the operator had subjected the claimants to an exposure below these dose limits, which incorporate a substantial safety margin for the individuals exposed (the level at which they are fixed not in this case corresponding to health concerns) he could not be held liable In the *In re TMI* case, the Court of Appeal thus denied the ALARA principle the status of a legal standard of care, giving it simply the value of an 'ethical' principle for operational purposes

2.2 The Difficulty of a Referential

In assessing liability in an accident situation, the court used the referential of normal operating conditions developed by the ICRP for the social acceptability of radiological hazards The discussion in fact proceeded on an unsound basis through a misunderstanding of the recommendations of ICRP Publication No 60, to which the judges referred. This Publication is extremely clear on the point dose limits do not apply to potential exposures (i.e. to the risk of an accident), to which risk limits (paragraph 129²²) apply, any more than they apply in the event of an accident (paragraph 192) or in the event of an "intervention" (paragraph 113²⁴, 131²⁵), an intervention being defined as all measures taken following an accident to deal with the consequences thereof

19 Herein lies no doubt, one of the practical difficulties of a country which uses legal proceedings to define what damage should be compensated This issue is all the more relevant in that, given the very high amounts of compensation obtained from the courts, the Commission instructed in 1990 in the United States to explore ways of improving the Price Anderson Act (which expires in 2002) was asked to consider the advantages of an administrative procedure In its conclusions the Commission, true to tradition, preferred the approach of judicial proceedings judged better able to gain public trust

20 The jurisdiction of the Third Circuit covers the States of New Jersey Pennsylvania Delaware and the Virgin Islands

21 The irradiation of the public was estimated at one-hundredth of 1 mSv and for the most exposed persons in the direct path of the release of radioactive gases at 1 mSv

22 Paragraph 129 of ICRP Publication No 60 "Dose limits do not apply directly to potential exposures Ideally they should be supplemented by risk limits which take account of both the probability of incurring a dose and the detriment associated with that dose if it were to be received "

23 Paragraph 192 of ICRP Publication No 60 "Doses due to major accidents are not subject to the dose limits because they can be dealt with only by intervention "

24 Paragraph 113 of ICRP Publication No 60 "Dose limits do not apply in the case of intervention

Optimisation is applicable at the design stage of installations (paragraph 120) – in the form of “risk constraints” [paragraph 112(b)²⁶] – or at the intervention stage (paragraph 212), for which the *form scale and duration should then be optimised so as to maximise the net benefit*” (paragraph 131)

In the case of TMI, the judges were therefore mistaken in referring to dose limits reserved to “practices”, i.e. to normal operating conditions. Attributing liability on grounds of non-compliance with the optimisation principle would be possible only as regards design – which amounts to possible liability on the part of the safety authorities who laid down the methods and limits for the probability safety calculations used to assess the risks – or to the intervention after the accident, holding that the responsible authorities did not take the optimal emergency measures. The operator is not concerned by such “submissions” which involve first and foremost the liability of the public authorities.

It can thus be seen that the legal situation in this case is complex, and requires that further consideration be given to the formulation, in the light of the ICRP Recommendations, of legislation adapted to accident situations, especially having regard to the consequences in respect of litigation.

2.3 ALARA and Safety: An Important Aspect as Regards Liability

In addition to this debate about the decision by the court to use normal operating conditions as a referential for an accidental situation, the question here is whether liability should be assessed in relation to implementation of the ALARA principle, defined as the behavioural norm which illustrates in practical terms the principle of care in managing stochastic effects. This discussion is all the more vital in that it is necessary to define what is “reasonable” when applying the ALARA principle. Any excessive interpretation by the courts of the reduction of exposure “*as low as reasonably achievable, economic and social factors being taken into account*”, as illustrated in particular by the *James* decision of 8 February 1995, is to be avoided. In this case, the Federal Court of San Diego rejected the *O Conner* precedent, and invoked the ALARA principle as a legal standard of care in a situation not of an accident but of normal operations. The claimant, who was a worker, had suffered a global exposure of only 0.31 mSv between 1982 and 1986. Although the court did not accept the claimant’s arguments in its final decision, the fact remains that if other courts hold, as happened in the *James* case, that the legal standard of care for such low exposures is the ALARA principle, the consequences for operators and the implications for future actions for damages from radiation could be considerable. Any exposure, however low, could be analysed and criticised with the benefit of hindsight, and any expert can always show that the dose suffered by the claimant could have been reduced even further. If the ALARA principle is linked to the no-threshold linear hypothesis to prove the irrefutability of the legal reasoning, it is true that the ALARA principle made mandatory under the law becomes an end in itself which obliges operators to do better than the dose limits. But since there can be “too much of a good thing” even with regard to safety, the courts must be reasonable in determining what

25 Paragraph 131 of ICRP Publication No 60: “The dose limits recommended by the Commission are intended for use in the control of practices. The use of these dose limits – or of any other pre-determined dose limits – as the basis for deciding on intervention might involve measures that would be out of all proportion to the benefit obtained.”

26 Paragraph 112(b) of ICRP Publication No 60: “In relation to any particular source within a practice, the magnitude of individual doses, the number of people exposed, and the likelihood of incurring exposures where these are not certain to be received, should all be kept as low as reasonably achievable, economic and social factors being taken into account. This procedure should be constrained by restrictions on the doses to individuals (dose constraints) or the risks to individuals in the case of potential exposures (risk constraints) so as to limit the inequity likely to result from the inherent economic and social judgments. (The optimisation of protection.)”

is 'reasonable' The *James* case shows that if the safety principle is not properly thought through this can give rise to problems

This is why it is to be hoped that the considerations set out by the court of first instance in the Forbach case in applying the optimisation principle will not set a precedent in the context of exposure to low doses of radiation. If the ALARA principle is to be considered as a legal standard of care in such circumstances, as was held by the court in the *James* case, this could have extremely harmful consequences on the endeavours made by operators to reduce workers' doses, endeavours which would in no case reduce the risk of legal action. Whether the dose was 1 mSv or 10 mSv, the operator could be held guilty of breaching his statutory optimisation obligation.

A new approach is probably needed to define the duty of care when courts are interpreting the ALARA principle. This would lie somewhere in between the *In re* TMI case, in which the dose limits alone were held to constitute the legal standard of care with the ALARA principle being a simple operational guide, on the one hand, and the *James* case in which the ALARA principle, defined as the legal standard of care, was applied to the case of an exposure which was much too low not to mean that this principle entirely lost its intrinsic value as a reasonable and practical guide to care on the other hand. The United States example shows the important role that could be played in France by a State radiation protection expert body able to monitor effectively the application of the ALARA principle. The existence and vocation of such a body would no doubt ensure that a reasonable approach would be adopted as regards the ALARA principle and that any improper interpretation of this principle by the courts could be avoided.

2.4 Last Aspect of TMI. The Doses Received...

The *In re* TMI case is, however, not yet closed. The Court of Appeal still has to overturn or confirm the decision of the Federal District Court as regards the doses received by the claimants. Following a very long series of hearings which gave rise to numerous battles between experts, the first instance court held that there was no scientific proof that the low doses to which the claimants had been exposed caused their cancer. It is probable that the appeal lodged by the claimants will be rejected²⁷. However, a recent epidemiological study, publicised in February 1997 by the Public Health School of the University of North Carolina²⁸, concludes that there is a link between the TMI accident and an increase in the rate of cancers in the vicinity of the nuclear power station. According to the authors of the study, there is evidence of much higher levels of radiation than had been previously reported. Described as "tendentious", this study, which contradicts previous findings of no correlation, could have a significant effect on the decision to be taken by the Court of Appeal on this matter.

III THE CHERNOBYL ACCIDENT

The question here is, in light of the experience of Chernobyl, to what extent can the law help restore public confidence following an accident in areas affected for long periods of time by radioactive contamination. After Chernobyl, the law was confronted with two new challenges: to compensate the damage to the health and property of individuals caused by the accident, and to

27 However, this issue remains of current interest since the Commission with the task of proposing ways of revising the Price Anderson Act has suggested compensating damage such as the increase of a risk of future illness in line with a system based on probability of causation.

28 "A Re-evaluation of Cancer Incidents Near the Three Mile Island Nuclear Plant: The Collision of Evidence and Assumptions." Steven Wing *et al.*, in *Environmental Health Perspectives* (to be published).

promote, in a more general context, an attitude of care vis-à-vis the radiological risk of living in such areas in the post-accident phase

3.1 The “Perverse” Effects of Compensation

Like the TMI accident, Chernobyl occurred in 1986 in a country which was not a signatory to the international conventions on nuclear civil liability. The United States applied the compensation system provided for under the Price Anderson Act, adopted as early as 1957, while the Soviet Union initially had no legislation on nuclear civil liability, providing merely for the material organisation of the evacuation and rehousing of any populations affected. Subsequently, since the Chernobyl accident also had repercussions in terms of persistent contamination of many areas and because compensation claims arose at the same time as a new political situation, the Parliaments of the Republics concerned (Belarus and Ukraine) finally filled the legal vacuum in this field by adopting in 1991 legislation on the status and social protection of the victims of the Chernobyl disaster, namely clean-up staff²⁹, those persons evacuated and those residing in the contaminated areas of the ex-USSR.

This last-minute legislation shows the extreme difficulty of formulating a compensation system when confronted with the management of a post-accident situation characterised by the persistence of contamination and the related radiological risks. Faced with this entirely new situation, it was decided to adopt legislation the purpose of which was to *“resolve all the social and medical problems arising from the radioactive contamination of the territory”*. The legislation thus covers not only the compensation of damage to health and of material loss caused by the accident itself (for example, the invalidity pensions awarded to clean-up staff or the reimbursement of property losses caused by the evacuation), but also compensation for having to live in contaminated areas, by means of numerous social, financial and medical benefits. This includes situations where the time spent, before rehousing, in contaminated areas called “mandatory rehousing”³⁰ or “voluntary rehousing”³¹ (considered the most harmful from the health viewpoint) or spent in “strict control”³² contaminated areas, has had or is having a prejudicial effect on the health of the local population which is required to undergo significant constraints as regards day-to-day living. By setting out a vast framework for the compensation of past, and above all future, consequences of the accident, rather than defining a safety threshold below which no countermeasures are necessary³³, the legislation creates a feeling of insecurity by granting compensation for the risks suffered, perceived as payment for being put in danger. Far from restoring confidence, it has, on the contrary, caused severe anxiety among some of the victims who have termed the compensation and benefits received “coffin premiums”.

A series of other perverse effects have given rise to ‘inflationist’ legislation. Given that the costs involved in applying the compensation legislation in the Republics were supposed to be covered by the USSR budget, the Republic authorities, in a difficult phase of learning about democracy, decided to increase the payments made to the population. Successive Acts passed after 1991 offered an ever-increasing number of payments and material facilities to compensate for damage to persons and property resulting in extremely favourable economic treatment for the victims of Chernobyl. This

29 Between 600 000 and 800 000 workers took part in the different clean-up operations on the Chernobyl site

30 Rehousing is mandatory when the lifetime dose exceeds 350 mSv

31 Areas in which the lifetime dose is between 350 mSv and 70 mSv are evacuated on a voluntary basis

32 A strict radio-ecological control is carried out in areas in which the lifetime dose cannot be higher than 70 mSv

33 The legislation does in fact take account of a possible risk well below the lifetime exposure threshold of 70 mSv established by the experts (1 mSv – dose limit for the public in a non-accident situation recommended in ICRP Publication No 60 – over a life of 70 years) notably by providing for countermeasures well below this dose which give credence to the idea that there is a residual risk

approach owed much to the feeling that compensation was due, and reflected the prevailing highly critical public position. It gave practical application to the desire of the authorities to satisfy the grievances of the victims for political and electoral reasons. The result was a loss of all legislative coherence not only because of the ever more favourable compensation offered but also because of the number of provisions adopted. This helped prolong the post-accident crisis by encouraging, for economic and financial reasons, claims to be considered as "a victim of Chernobyl".

The legislation currently being prepared on the "compensation of persons having suffered from other nuclear accidents" is part of this loss of "coherence" and will no doubt make these problems worse.

3.2 In Favour of a New Legal Approach to Post-Accident Management

The necessary, though insufficient, purpose of compensation legislation such as that conceived to manage the post-accident Chernobyl situation is to indemnify the damage suffered at the individual level, the major perverse effect of which has been to create *ex nihilo* the social status of a victim. This approach corresponded to a period during which the authorities followed a 'reactive' policy without seeking to resolve the real underlying problems involved in post-accident management.

The long-term radiological contamination of some 130 000 km² shows that something beyond mere financial compensation is required. Reparation here encompasses the goal of a return to normal living conditions, similar to those of the past. The law must henceforth regulate new living conditions in areas altered by the presence of a radiological risk.

This legislation could potentially have been "active", encouraging a more positive and dynamic attitude on the part of the public to the persisting radiological risk. For example, the local population should be able to participate, by means of a democratic process, in fixing an acceptable threshold for the post-accident radiological risk below which it would accept that no countermeasures are needed and to manage in consequence, by taking the precautions required, the accepted residual risk. The contradiction of an objective safety threshold established by experts at 70 mSv, below which the risk was presented as being nil but as requiring, nevertheless, countermeasures, was the result of a denial of residual risk which was much more harmful to restoring confidence in post-accident management.

Areas suffering long-term transformation by the accident require a social reconstruction of the problems of risk and responsibility, the latter being defined here in its ethical sense of "solidarity and shared risk" so that new forms of confidence and social support help limit the risk. For this purpose new forms of mediation, based on the close involvement of individuals in preferably local transactions regarding the goals of post-accident reconstruction, need to be found. This approach has its roots in safety, since once scientific and technical knowledge begins to reach its limits, it is social action which takes over in anticipating the risk to the public. This calls for a new approach which in turn needs the law to fulfil a new role. Something more is required than a normative approach based on the logic of scientific knowledge. Chernobyl post-accident management showed how scientific expertise can be confronted with a crisis of public confidence.

Agreement on safety objectives must proceed on the basis of discussions and participation using a pragmatic approach in which that which is reasonable or provisionally acceptable is preferred to the substantive rationality of techno-science. Assumption of the radiological risk associated with the new lifestyles to be introduced in contaminated areas must be based on new relations which will be born

out of a pragmatic approach to care, based on values such as transparency about the levels of residual risk, vigilance and democracy

CONCLUSION

In light of these four experiences, it would seem that the law on liability is adequate when a known and foreseeable risk gives rise to damage of a non-stochastic type. The damage here is certain, the causal link is easily proved, and fault arises from the failure to take adequate safety measures.

When the damage is stochastic in nature, the links between the law on liability and the duty of care need to be addressed. This basic question is the one which our societies must now ask themselves when, in a situation of uncertainty as regards risks, people choose to act and damage results. The courts are then faced with the complex problem of judging how carefully these people have been or should have been acting. The law on liability is also confronted with another complex problem resulting from the involvement of "non-stochastic" and "stochastic" contexts. The question remains to be answered whether compensation for non-stochastic damage should also take into account the subsequent risk of stochastic effects appearing.

As to post-accident situations, the law on liability is no doubt inadequate to deal with the new forms of social mediation which living in these "new" areas will require.

These many difficulties highlighted in the case-law show the complexity of the interpretation of radiation protection regulations. This is all the more important in that new radiation protection regulations are today being prepared in our countries.

It is probably in trying to define common safety objectives, not only in post-accident reconstruction but also in normal management situations, that the philosophical dimension of the principle of responsibility faces its most difficult challenge. Thus, this principle could be added to the three principles on which the system of radiation protection developed by the ICRP is based, namely the justification of the practices leading to exposure to ionising radiation, the optimisation of protection, and individual dose limits. It could be defined both in terms of its philosophical content (meaning the ethics of an action with regard to others in order to establish a system of vigilance) and its legal dimension (the obligation to remedy damage and to submit to sanctions when radiation protection principles are not respected).

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Perpetuity of Rights and Obligations in the Agreement for Co-operation in the Peaceful Uses of Nuclear Energy Between the European Atomic Energy Community and the United States

by Ralph Lennartz*

INTRODUCTION

In the world of nuclear energy, which is a world largely inhabited by “specialists” and “experts”, a specialised language has developed. Words and expressions have a specific meaning, known only to those using them regularly in their professional communications with colleagues. Abbreviations especially belong to the common jargon of the nuclear world. Expressions like “depleted”, “HEU”, “LEU”, “PWR”, “BWR”, etc., are well known to almost everybody in the nuclear world.

During the negotiations of the Euratom/U.S. Nuclear Co-operation Agreement, which entered into force on 12 April 1966, a term may have been added to this jargon: “perpetuity”.¹ Strictly speaking, it is not a typically nuclear term but one stemming from the field of international law. It means the continuation in effect of rights and obligations under an international agreement after the termination or expiry of that agreement.

The issue first arose between the American and European negotiating teams when it became apparent that the new Agreement would not be in force on 1 January 1966, the day the previous Agreement, dating from 1960 (but with later amendments)², expired. The question was what would happen with the obligations attached to the inventory of nuclear material, non-nuclear material and equipment in the territory of the Member States of the European Union after the expiry date of the old Agreement. One possibility, mentioned by the European side, would have been that these obligations (i.e. the obligation to use this inventory only for peaceful purposes and the obligation not to retransfer the items outside the jurisdiction of Euratom without the prior consent of the United States government) would lapse with the Agreement. The U.S. side, however, contended that these obligations would remain in effect after the expiry of that Agreement and based their position upon Article 70, paragraph 1(b), of the Vienna Convention on the Law of Treaties.

Paragraph 1 of this Article reads as follows:

Unless the treaty otherwise provides or the parties otherwise agree, the termination of a treaty under its provisions or in accordance with the present Convention

- a) releases the parties from any obligation further to perform the treaty*
- b) does not affect any right, obligation or legal situation of the parties created through the execution of the treaty prior to its termination*

* This article has been kindly prepared by Ralph Lennartz, Directorate-General for Energy, European Commission. The ideas expressed and the facts presented herein are the sole responsibility of the author.

1 See *Nuclear Law Bulletin* No. 57.

2 Additional Agreement for Co-operation between the United States of America and the European Atomic Energy Community (Euratom) concerning the Peaceful Uses of Nuclear Energy, signed on 11 June 1960. *Official Journal of the European Communities* No. 31, 29 April 1961.

This interpretation would imply that, since no provisions to the contrary were agreed in the 1960 Agreement, the obligations for peaceful use and prior consent for retransfers and indeed any other obligations under the Agreement, would continue to exist in spite of the expiry of the Agreement on 31 December 1995

It is however questionable whether Article 70, paragraph 1(b) of the Vienna Convention can be interpreted thus way. According to the International Law Commission³, Article 70 has to be read in light of Article 71, paragraph 2 of the Convention⁴ which lays down a special rule for the case of a treaty which becomes void and terminates because of the emergence of a new peremptory norm of general international law with which it is in conflict (see Article 64 of the Vienna Convention)⁵. It was considered inadmissible to regard the emergence of a new rule of *jus cogens* as retroactively rendering void acts legally made at a previous time. Thus it is clear that the aim of Article 70, paragraph 1 (b) is to preserve the legality of acts done at a time prior to the new rule.

The interpretation which the U.S. Government wanted to give to this provision however comes down to rendering the provisions of Article 70, paragraph 1(a), which is the core of the Article useless. The Parties would not be released from the obligations which are at the heart of the agreement but would, on the contrary, be held to them eternally. This interpretation was therefore unacceptable to the Commission.

PERPETUITY IN THE NEW NUCLEAR CO-OPERATION AGREEMENT BETWEEN EURATOM AND THE UNITED STATES

The importance of the above question resided in the consequences of a recognition – or otherwise – of the perpetual validity of certain rights and obligations. If the peaceful use commitment, accepted by Euratom under the 1960 Co-operation Agreement, did not remain in force after the expiry of that Agreement on 31 December 1995, this would mean that the nuclear material supplied by the U.S. could, after that date, be used for non-peaceful purposes. The obligation not to transfer such material outside the jurisdiction of Euratom without prior consent from the U.S. government would likewise cease to exist and thus Euratom could retransfer such material to a third country not acceptable under U.S. export policy. In other words, the stock of U.S. obligated nuclear items in the territory of the Member States of Euratom would be reduced to zero from the 1st of January 1996 onwards.

Even if, on the basis of arguments developed under the previous paragraph, this would legally have been a logical consequence, it would have been politically unacceptable between two of the largest nuclear trade partners in the world. It would also have been incomprehensible to public opinion that from one day to the next, nuclear material which had always served peaceful purposes could be used for the production of a nuclear explosive device or any other military purposes.

3 Reports of the International Law Commission on the second part of its seventeenth session (3-28 January 1966) and on its eighteenth session (4 May-19 July 1966). United Nations, New York, 1966. General Assembly Official Records, twenty-first session, Supplement No. 9 (A/6309/Rev.1), comments on Article 66 of the draft Convention.

4 Article 71, paragraph 2 reads as follows:

In the case of a treaty which becomes void and terminates under Article 64, the termination of the treaty:

- a) releases the parties from any obligation further to perform the treaty;
- b) does not affect any right, obligation or legal situation of the parties created through the execution of the treaty prior to its termination, provided that those rights, obligations or situations may thereafter be maintained only to the extent that their maintenance is not in itself in conflict with the new peremptory norm of general international law.

5 Article 64 of the Convention reads:

If a new peremptory norm of general international law emerges, any existing treaty which is in conflict with that norm becomes void and terminates.

Thus, Euratom decided to act, during the period between 1 January 1996 and the entry into force of the new Agreement on 12 April 1996 when no co-operation agreement was in force between Euratom and the United States, in the spirit of the new Agreement, according to Article 18 of the Vienna Convention⁶ In practice this meant that operators of nuclear installations in Euratom continued to keep records of U S obligated items, previously covered by the 1960 Agreement, in order to be able to establish the initial inventory under the new Agreement on the date the latter entered into force This is an obligation under Article 20 of the new Agreement, which stipulates that the provisions of the new Agreement shall apply to the inventory of nuclear material, equipment and non-nuclear material formerly subject to the 1960 Agreement

Because it was deemed unacceptable to use U S obligated material for non-peaceful purposes after the expiry of the new Agreement, the European Atomic Energy Community accepted in the new Agreement that certain obligations would remain in force after the expiry of that Agreement Of course, this perpetuity will be reciprocal The details of the provisions on perpetuity, as laid down in Article 14 of the new Agreement, are the following

1 The Agreement will remain in force for an initial period of 30 years (Article 14 2) Thereafter it will be automatically renewed for 5 year periods unless it is terminated by either Party Thus, the issue of the survival of rights and obligations in case of termination of the Agreement will only become relevant in 30 years, and probably much longer, from now The circumstances of the co-operation may have substantially changed by that time

2 In the event that the Agreement is terminated, either pursuant to Article 14 2 or pursuant to Article 13 1, the Parties have agreed on perpetuity of the obligations concerning safeguards, peaceful use and the physical protection of nuclear items (Article 14 3) The motivation behind this decision was that, after the termination of the Agreement, the nuclear material will remain suitable for nuclear purposes, thus entailing potential non-proliferation risks These three general obligations therefore only serve to ensure that no proliferation risk will arise from the material after the legal framework under which it was supplied ceases to exist After all, it is not foreseen that the European Atomic Energy Community will have disappeared at the time of a possible termination of the Agreement – as the Treaty establishing the European Atomic Energy Community has been concluded with indefinite duration – and therefore the Euratom mission to ensure the peaceful use of nuclear material will also subsist

3 The Parties have also agreed upon the perpetuity of the prior consent regime on the retransfers of nuclear items to third countries This consent regime is more favourable to Euratom than the one it had accepted under the 1960 Agreement Under that Agreement,

no such material will be transferred to unauthorised persons or beyond the control of the Community, except as the Government of the United States of America may agree to such transfer and then only if the transfer of the material is within the scope of an

6 Article 18 of the Convention reads as follows

A State is obliged to refrain from acts which would defeat the objective and purpose of a treaty when

- a) it has signed the treaty or has exchanged instruments constituting the treaty subject to ratification acceptance or approval until it shall have made its intention clear not to become a party to the treaty or*
- b) it has expressed its consent to be bound by the treaty pending the entry into force of the treaty and provided that such entry into force is not unduly delayed*

*Agreement for Co-operation between the Government of the United States of America and another nation or group of nations*⁷

Thus, even if the recipient countries have an agreement for co-operation with the U.S. the previous regime for retransfers was one of "case by case" consent. The regime agreed to in the new Agreement is therefore a significant step forward since prior consent is given on the basis of certain criteria, so that retransfers to third countries satisfying the agreed criteria are allowed generically.

With the acceptance of this regime the advantage in relation to the previous Agreement has been indefinitely prolonged in time. It is to be recalled that under the Guidelines for Nuclear Transfers⁸ the principle of consent on certain retransfers has been internationally accepted. In this respect the new Agreement therefore adds no extra burden on operators.

4 Further conditions for the retransfer consent regime have been laid down in the Agreed Minute (paragraphs 2, 3, 4, 5, 8, 9, 10, 11 and 12)⁹. Therefore agreeing to perpetuity on these paragraphs was only a normal consequence.

5 There is no commitment on the perpetuity of further rights and obligations, especially of further consent rights. The Parties shall hold consultations on this subject (Article 14.4) only at the time the Agreement expires or is terminated. Should the Parties not reach a joint decision on the perpetuity of further consent rights, then the following provisions will apply:

- first of all, an inventory of nuclear items, equivalent to the inventory formerly subject to the 1960 Agreement, will revert to the regime of that Agreement (Article 14.5(a)). An additional advantage in such a case is, however, that the "case by case" consent for retransfers under the 1960 Agreement will not be applicable but, in its place, the more favourable prior consent regime of the new Agreement provided for in paragraph 3 of Article 14. This will probably apply to the largest part of the total amount of U.S. obligated nuclear items present in Euratom at the time of a possible termination.
- secondly, for any remaining items subject to the Agreement, the question will then be referred to an arbitral tribunal (Article 14.5(b)). The importance of the reference to the Vienna Convention on the Law of Treaties is, however, unclear, because, as has been argued above, the question of whether the objective of Article 70, paragraph 1(b) of this Convention is to preserve obligations under the Agreement contrary to Article 70, paragraph 1(a) is far from certain.
- thirdly, it may be that the Parties, or indeed a tribunal, decide, that there should be perpetuity on further consent rights. In that case, it is already provided for in Article 14.3 of the new Agreement that the conditions for suspension of such consents will also survive.

Should the arbitral tribunal decide that further consent rights do survive, then the amount of material subject to such rights will be limited. If the tribunal decides that there is no survival of further consent rights, either Party shall have the right to require the return of the items as provided for in Article 13 of the

7 Article XI of the Agreement.

8 As published in IAEA document INFCIRC/254/Rev.2/Part 1.

9 These provisions were reproduced in the *Nuclear Law Bulletin* No. 57, June 1996, p. 99. See also my article in the same issue of the *Nuclear Law Bulletin*.

Agreement. It is to be noted however that the return of material will have to fulfill the conditions laid down in paragraph 9 of that Article.

The provision that the Agreement remains in force as long as no decision is taken (see Article 14.5 of the Agreement), serves to prevent a legal vacuum from the moment the Agreement terminates at the date mentioned in the written notice pursuant to paragraph 2 of Article 14, i.e. the end of the 30 year period or of a subsequent 5 year period.

CONCLUSION

It ensues from paragraph 1 above that many uncertainties remain about the correct interpretation of the concept of perpetuity. This is illustrated by the fact that, during the discussions of the draft agreement in the Council of Ministers of the European Union, the Legal Services of the Commission and the Council arrived at different opinions on the question whether consent rights under the 1960 Agreement would continue to exist. As is clear from the opening words of Article 70 of the Vienna Convention – quoted above – the law is what is agreed between the Parties. In the Agreement, the parties found a balanced compromise which takes into account the specific nature of nuclear material and items, thereby setting a precedent for other cases where a question arises whether obligations to safeguard nuclear items, to protect them physically and to use them only for peaceful purposes continue to exist after the termination or expiry of a nuclear co-operation agreement.



CASE LAW AND ADMINISTRATIVE DECISIONS

CASE LAW

France

*Council of State's Judgment of 28 February 1997 on Superphenix**

The remedial measures implemented to correct certain technical deficiencies in the operation of the Superphenix fast reactor permitted its restart to take place in 1992. Its operation had been suspended for more than two years, and the French regulations on nuclear installations had rendered null and void its 1977 operating licence. A new operating licence having been issued, the Government adopted the Decree of 11 July 1994 authorising the restart of the reactor.

This new licence re-opened a challenge led primarily by Swiss local government groups and by concerned ecologists. Three petitions to annul the Decree had been made to the Council of State by the Canton of Geneva together with other Swiss communities, by the World Wildlife Federation Geneva and by the Rhône-Alpes Federation for the Protection of Nature. A large number of objections were raised, as much to do with the form as with the substance of the Decree.

By judgment of 28 February 1997, France's supreme administrative court annulled the Decree of 11 July 1994.

Following the conclusions of its Government Representative, the Council of State judged the Decree to be illegal on the grounds that it assigned a "research and demonstration function" to the reactor's operation, whereas the licence application for its operation made by NERSA and the documents submitted in connection with the public inquiry had "described the principal purpose of the reactor's operation as being electricity production". This change affected, in a substantive manner, the intended use of the reactor and "the operation of a fast neutron reactor could not be licensed for this new purpose on the basis of the public inquiry which had been carried out".

It was thus "for a procedural irregularity" that the Decree was struck down.

Pointing to the fact that the February 28 judgment did not call into question the utility or safety of the installation, the Government immediately confirmed its intention to continue operating the Superphenix "in accordance with the decision of the Council of State" (Press Release of the Ministry of Industry of 28 February 1997). The same day, EDF and its affiliate NERSA declared that "the reactor is essential in preparing for energy choices in the 21st century" (Press Release of 28 February 1997), thus expressing its wish to continue operating the fast reactor.

* This note was kindly prepared by Patrick Blanchard, Legal Services (National) Division, *Electricité de France*.

A doubt persists, however, given the Council of State judgment, as to the procedure that must be followed to obtain a new licence given that the 1994 Decree was struck down on the grounds that it authorised research as a principal function of the Superphenix when in fact the NERSA application for an operating licence referred only to electricity production as its primary objective, one must wonder whether a new decree authorising its operation for both electricity production and research will be valid in the absence of a new public inquiry to re-examine the issue?

Ireland

Constance Shortt and Others v Ireland and the Attorney General and British Nuclear Fuels plc *

Four residents from Dundalk, County Louth, namely Constance Shortt, Mary Kavanagh Mark Dearey and Ollan Herr, are seeking an injunction to restrain operations at the THORP plant (at Sellafield, United Kingdom) on the basis that it has not fully complied with the 1985 EU Directive on environmental impact assessment and with the justification principle under Euratom legislation. They are also seeking damages for personal injury they or other residents of Ireland allege they have or allege they will suffer, as a result of discharges from Sellafield. Ireland and the Attorney General have been named by the Plaintiffs as co-defendants in the proceedings on the basis that, in their view, the State should have intervened to ensure that EU legislation was fully complied with before the plant went into operation. On 22 March, 1994, Mr Justice Carney made an Order allowing the Plaintiffs to serve a plenary summons outside the jurisdiction on British Nuclear Fuels.

Counsel for BNFL applied to the High Court on 8 December, 1994 to have the company discharged from the proceedings. They put forward a motion seeking to set aside the Order allowing service outside the jurisdiction. BNFL's application was heard in the High Court by Mr Justice O'Hanlon over six days from 9-20 December, 1994. Although Ireland and the Attorney General are named as co-defendants in the substantive case taken by the Dundalk residents, the Government in fact also resisted British Nuclear Fuels' application to have an Order allowing service of the summons out of the State set aside.

In his judgment, Mr Justice O'Hanlon concluded that the original Order made by Mr Justice Carney giving leave to serve out of the jurisdiction was validly made and he therefore refused the application to set aside the Order giving such leave. However, he characterised the Plaintiffs' claim as primarily a personal injury action to which the alleged breaches of European law were ancillary. Costs were awarded to the Plaintiffs. British Nuclear Fuels plc appealed the matter to the Supreme Court. The appeal was heard on 24 and 25 January 1996, and on 24 October 1996, the Supreme Court Judges were unanimous in their decision to uphold the 1995 judgment of the High Court establishing the jurisdiction of the Irish Courts to hear the substantive (that is, personal injury) case. The summons has now been served on BNFL, but no date has yet been set for the hearing of the substantive case.

* This note has been kindly prepared by the Nuclear Safety Division, Department of Transport, Energy and Communications (Ireland). Gratitude is extended to Judith Anne MacKenzie, Legal Services Directorate, Department of Trade and Industry (UK) for her comments on this note.

United States

*Litigation from the 1979 Three Mile Island Accident Takes Another Turn**

In the previous note, it was stated that ten personal injury "test" cases arising from the 1979 Three Mile Island (TMI) nuclear power plant accident were about to go to jury trials in Pennsylvania.¹ The trials did not occur. Instead, on June 7, 1996, the U S District Court that was to have heard the test cases beginning that month granted summary judgment in favour of Defendants as to all personal injury Plaintiffs, and dismissed all of the approximately 2 100 pending lawsuits.² Now, the already protracted TMI litigation is back before the U S Court of Appeals for the Third Circuit for a review of the June decision. A ruling on the newest appeal is not expected before later in 1997. Whatever the result, further appeals are anticipated.

The tortuous paths the TMI litigation has taken over the last eighteen years are too complex to recount here. Since 1979, the TMI cases have travelled to and from the U S Supreme Court, the Third Circuit U S Court of Appeals, and several federal and state³ trial courts on numerous occasions. It is useful to note this was the second time Defendants⁴ had moved for summary judgment. The first time, the Third Circuit, affirming in part the District Court's ruling, found that Defendants had violated the duty of care owed to Plaintiffs.⁵ Accordingly, "the only remaining legal and factual issues" in the case then related to causation and damages.

The June 1996 summary judgment was granted by the District Court on the ground that Plaintiffs had failed to present evidence sufficient to create a material factual dispute on the issue of radiation dose, and therefore failed to state their prima facie case on causation. Because the District Court found the quantum of Plaintiffs' expert evidence on the issue of dose to be insufficient and because no Plaintiff would be able to state a prima facie case without adequate dose evidence, the ruling was made binding upon all 2 100 Plaintiffs, not just those in the ten "test" cases.

* This note has been kindly prepared by Omer F. Brown II of Gallo Brown and Ross L.L.P. Washington D.C. The note constitutes an update of his previous note "Litigation Persists from the 1979 Three Mile Island Accident" reproduced in *Nuclear Law Bulletin* No. 57 pp. 67-69.

1 See *Nuclear Law Bulletin* No. 57 p. 67.

2 *In Re TMI Litigation Consolidated Proceedings*, 927 F. Supp. 834 (M.D. Pa. 1996). Summary judgment can be granted where there are no remaining issues of material fact to be decided and one party is entitled to judgment as a matter of law. In a recent important case involving scientific evidence, the U.S. Supreme Court ruled a trial court may direct a judgment if it concludes that the scintilla of evidence presented supporting a position is insufficient to allow a reasonable jury to conclude that the position more likely than not is true. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), 113 S.Ct. 2786, 2798 (1993).

3 Jurisdictional questions related to the TMI actions prompted the U.S. Congress to amend the Price-Anderson Act in 1988 to ensure federal court jurisdiction in most nuclear damage cases. 42 U.S.C. §2210(n)(2).

4 Defendants include the plant operator and its affiliated companies, as well as corporations that designed, supplied and built equipment for TMI. Under the Price-Anderson Act's system of economic channelling of liability, one law firm retained by the nuclear insurance pools has been representing all the Defendants since the beginning of this litigation.

5 *In Re TMI Cases Consol. II*, 67 F.3d 1103, 1118 (3d Cir. 1995). As I noted in *Nuclear Law Bulletin* No. 57 p. 68, the courts have ruled the duty of care owed to Plaintiffs is measured by whether Defendants released radiation in excess of the levels then permitted by the U.S. Nuclear Regulatory Commission's regulations (10 Code of Federal Regulations, Sections 20.105 and 20.106) as measured at the boundary of the facility, not whether each Plaintiff was exposed to those excessive radiation levels. Sections 20.105 and 20.106 in 1979 set 0.5 rem (50 mrem) as the maximum yearly radiation exposure allowed for the general public. See 10 Code of Federal Regulations, Section 20.1301 (1996) (now setting the annual permissible exposure rate for the public at 0.1 rem (1 mSv)).

In late 1995 and early 1996, the District Court had conducted extensive hearings related to Plaintiffs' dose and medical causation experts. In granting this summary judgment motion, the District Court noted that, despite finding "the vast majority of Plaintiffs' experts to be well qualified," it found many of their opinions to be based upon methodologies that were scientifically unreliable and upon data that a reasonable expert in the field would not rely upon. Accordingly, in the exercise of its "gatekeeping" function, the District Court determined it necessary to exclude much of Plaintiffs' proffered expert testimony. Thus, the court granted Defendants' motion for summary judgment on the issues of dose and medical causation. The issue of damages was never reached.

Defendants had argued that all of the related governmental reports and data confirmed that area residents, if exposed at all, were exposed to less than 100 mrem of radiation during the TMI accident. Defendants pointed to the same reports to contend "no significant health effects from the accident were predicted to occur and none have been observed." The District Court found Defendants had presented extensive evidence documenting their position that dangerous levels of radiation did not reach populated areas during the TMI accident. The evidence included a source term analysis of release pathways, plume dispersion analyses, general and epidemiological studies examining potential health effects of the accident and finding no significant effects, and a multitude of governmental reports examining the causes and effects of the TMI accident.

Plaintiffs' case has been premised upon the theory that one or more hydrogen blowouts occurred during the TMI accident, whereby large quantities of noble gases were expelled into the environment. The blow-out was important to Plaintiffs' theory of the case, because, according to the District Court, it purported to explain how quantities of radiation higher than those estimated by Defendants were expelled into the atmosphere. In the June 1996 decision, the District Court found the opinions of Plaintiffs' only expert on the hypothesized hydrogen blow-out to lack the certainty of a professional judgment. It thus was unable to meet the U.S. Supreme Court's test in *Daubert* that expert scientific testimony must be sufficient to allow a reasonable juror to conclude that the position more likely than not was true.

Even presuming that Plaintiffs could show that they were exposed to radiation emitted during the TMI accident (at the court's threshold of 10 rems or more for each individual), the issue became whether they also could demonstrate that the exposure was more likely than not the cause of their respective neoplasms. Viewing all the evidence before it in a light most favorable to Plaintiffs, the District Court found the evidence insufficient to create any material factual dispute and insufficient to carry Plaintiffs' burden of proof at trial. The judge ruled Plaintiffs had neither presented direct evidence that they were exposed to doses of radiation greater than 10 rems, nor had they presented indirect evidence capable of supporting the inference that they were exposed to cancer-inducing levels of radiation.

In the conclusion of her opinion, the District Court judge observed the parties have had nearly two decades to muster evidence in support of their respective cases. She indicated the discrepancies between Defendants' proffer of evidence and that put forth by Plaintiffs "in both volume and complexity are vast" and that the "paucity of proof alleged in support of Plaintiffs' case is manifest."

Further appeals (by either or both sides) presumably will extend the TMI litigation well beyond two decades after the 1979 accident.

U.S. Court of Appeals Decision Department of Energy's Legal Obligation to Accept Spent Nuclear Fuel*

As previously reported (see *Nuclear Law Bulletin* No 58) in *Indiana Michigan Power Company v U S Dept of Energy*, 88 F 3d 1271 (D C Cir 1996), the U S Court of Appeals for the District of Columbia Circuit found on 23 July 1996 that, although Congress had anticipated the existence of a repository by 1998, the Nuclear Waste Policy Act of 1982 created an unconditional obligation that the Department of Energy commence disposing of spent nuclear fuel no later than 31 January 1998, in return for fees by utilities under the Standard Contract. The Department had argued that it did not have an unconditional statutory or contractual obligation to accept spent nuclear fuel by 31 January 1998, in the absence of a repository or interim storage facility constructed and licensed under the Act. The Court held, however, that it was premature to determine an appropriate remedy as the Department had not yet defaulted upon either its statutory or contractual obligation. The Department did not appeal the decision.

On 17 December 1996 the Department issued a letter advising Standard Contract holders that it would not commence acceptance of spent nuclear fuel by 31 January 1998. Pursuant to Article IX ("Delays" clause) of the Standard Contract, the Department advised the utilities that it anticipated a delay in accepting spent nuclear fuel and requested the contract holders to respond by 14 March 1997 on how best to accommodate the delay.

Litigation was commenced in the U S Court of Appeals for the District of Columbia Circuit on 31 January 1997 (*Northern States Power Company v U S Dept of Energy*), exactly one year before the Department must commence disposal under the 1996 *Indiana Michigan* decision. Petitions were filed by thirty-six utilities, all signatories to the Standard Contract, and forty-six State agencies, for the enforcement of the 31 January 1998 disposal obligation under the Nuclear waste Policy Act of 1982.

The utilities assert that the anticipated inability of the Department to meet the deadline entitles them to suspend payment of fees prescribed under the Nuclear Waste Policy Act and to escrow such fees until the Department commences disposal pursuant to the Standard Contract. The utilities also seek a two-part order: first, prohibiting the Department from suspending the Contract or from imposing any interest on utilities placing their fees in escrow, and secondly, directing the Department to develop a program to begin disposal by the 1998 date.

The U S Department of Justice planned to file a motion on 20 March 1997 to dismiss the petition for lack of jurisdiction and the utilities' failure to exhaust administrative remedies. However, on 19 March 1997 the Court issued an Order stating that a dispositive motion would be inappropriate in this case and directing the parties to address any jurisdictional issues in briefs on the merits. Attorneys for the utilities have viewed this unusual Order from the Court as "extremely good news" which could result in a decision earlier than otherwise anticipated.

* This note has been kindly prepared by Sophia Angelini of the U S Department of Energy

European Commission

*Judgment of the Court of First Instance in the KLE Case**

On 25 February 1997, the Court of First Instance handed down its judgment in KLE's case against the European Commission. The applicant, KLE, had made two claims: the first was for annulment of the Commission decision of 4 February 1994 in which the Commission confirmed that the Euratom Supply Agency had to be informed of the origin of the material concerned before the time period for a decision of the Agency (in respect of the conclusion of a contract submitted to it) could be held to have started, and the second claim was for annulment of the Commission decision of 21 February 1994 together with damages resulting from the allegedly illegal decision. Both claims were rejected by the Court.

As far as the first claim is concerned, the Court held that it is essential that the Agency know the geographical origin of the materials to be supplied in order to assure reliability of supply. The Court was of the opinion that the origin had been at least implicitly agreed by the parties at the time of entering into the contract, and that thus a later communication of the origin to the Agency was not acceptable. The Court concluded that the Agency's decision, taken the tenth day after receipt of the information on the origin, was within a reasonable lapse of time and did not infringe Article 5bis (f) of the Agency Rules of 1960 and 1975 concerning the manner in which demand is to be balanced against supply. Therefore the first claim was rejected.

In support of its second claim, KLE submitted several arguments, many of which concerned whether, under the Treaty, the exercise of the Agency's exclusive right to conclude contracts for the supply of uranium could derogate from market forces. In KLE's opinion, conclusion of the contract should not have been refused.

With reference to its recently confirmed judgment of 15 September 1995 in the ENU case (see *infra*), the Court of First Instance considered the supply system established by Chapter 6 of the Euratom Treaty in light of one of the aims of the Community, that of guaranteeing reliability of supplies, in accordance with the principle of equal access to resources. It was for that purpose that a specialised body was established, the Euratom Supply Agency, with the exclusive right to conclude contracts for the supply of nuclear materials from inside or outside the Community. The simplified procedure introduced by Article 5bis of the Rules of the Supply Agency did not deprive the Agency of this exclusive right, and therefore the Agency had the right to object to a contract which might prejudice the achievement of the Treaty objectives.

The Court considered that, in general, the Agency must observe the principle of balancing supply and demand, however, the Treaty provides for one specific exception. Under Article 61, paragraph 1, the Agency is obliged to meet all orders "unless prevented from so doing by legal or material obstacles". In the KLE case three such obstacles were identified by the Commission: one derived from the policy of diversification of external sources of supply, one related to the low, not market-related, price level and one concerned the obligation of equal access, i.e. the requirement not to allow a privileged position for certain users.

* This note and the one following have been kindly prepared by Andre Bouquet, Euratom Supply Agency, and constitutes a follow-up to previous notes on the KLE and ENU Cases published in *Nuclear Law Bulletin* No. 58 on the KLE Case published in *Nuclear Law Bulletin* No. 54 and on the ENU Case published in *Nuclear Law Bulletin* Nos. 55 and 56.

As to the first obstacle, the Court considered, again with a reference to its ENU judgment, that the Agency has a discretion to bar certain imports of uranium which would reduce the diversification of external sources of supply. In particular, the Court admitted that security of supply could be jeopardised if CIS imports were permitted in unlimited quantities, and were to replace traditional supplies, without any guarantee of continuity of availability in the long term.

With respect to the second obstacle, the Court established, by reference to the Court of Justice's Ruling in the case of the Convention on the Physical Protection of Nuclear Materials (Ruling 1/78), that Article 14 of the Trade Agreement between the USSR and the Community, which provides that trade is to take place at market-related prices, is part of Community law. After analysing the price data, in particular the fact that the subject contract was designed to cover medium term needs and that the KLE's proposed price was well below the Agency's published average long term prices, and even the average spot market prices, the Court concluded that the price proposed by KLE was not market related. Therefore, the second obstacle was proven to exist.

Finally, concerning the third obstacle, the Court confirmed that if supplies from a certain source are to be limited (see first legal obstacle), the limitation can be implemented through the application of a permissible threshold of dependence, expressed as a maximum percentage of individual users' needs. The Agency had fixed the permissible degree of dependence within the bounds of its broad discretion at a maximum of 25%, to be applied on an equal footing vis-à-vis all users. The existence of the third obstacle was therefore also established.

In more general terms, the Court stated that it is in the Community's interest that a share of a particular source should not become too large, and that trade with other countries should also be developed. The Court also rejected KLE's plea that the contract was between two Community companies, and observed that BNFL acted only as an intermediary. Referring to published information about the Agency's policy (the Council 1986 resolution on energy policy in which geographical diversification is a key policy objective, the Trade Agreement with the USSR, the provisions of the Euratom Treaty, as well as the indications published in the Agency's Annual Report), the Court rejected the argument of lack of transparency and observed that the 25% threshold, which was not published at that time, was not a strict rule but an internal and flexible assessment criterion. As to complaints concerning an alleged breach of the principle of equal treatment, the Court observed that KLE had not established the existence of such a breach. Since less restrictive actions (establishment of stockpiles, determination of origin at equal conditions) would not have been able to solve the problem, the Court rejected the argument of proportionality. The Court also considered the Commission's reasoning to be sufficient.

Consequently, the Court rejected the annulment action as unfounded. It also rejected the action for damages, without having to examine its admissibility.

Judgment of the Court of Justice in the ENU Case

On 11 March 1997, the Court of Justice handed down its judgment in the case brought by ENU against the European Commission and dismissed ENU's appeal against the judgment of the Court of First Instance of 15 September 1995. The original action brought by ENU before the Court of First Instance consisted of 1) a claim for annulment of the Commission's decision of 19 July 1993 rejecting the requests by ENU concerning the preferential sale of the Portuguese production by a comprehensive application of Chapter VI and the introduction of a "special action", and 2) a claim for damages. In its judgment of 15 September 1995, the Court of First Instance dismissed ENU's

action, following which ENU lodged an appeal, essentially invoking three submissions – first that the Court had made a mistake as to the object of the claim, secondly that the Court had not examined the validity of the simplified procedures, and thirdly, that the “special action” had not been interpreted as a commitment (points 27-29). In his conclusions of 5 December 1996, the Advocate-General recommended that the Court reject the appeal partly as being inadmissible and partly as being unfounded.

The Court rejected the first submission (error as to the object of the claim), holding that ENU had indeed asked for a guarantee as to the sale of its production, since the Commission had at the outset stated its position on an implicit refusal to exercise the right of option. The Court of First Instance had therefore quite correctly addressed the application of Chapter VI in conjunction with the question of the sale of the Portuguese production, without distorting the nature of the request.

As to the second submission, the Court of Justice confirmed the position of the Court of First Instance that, in the absence of Community preference, the refusal to accede to ENU’s request was not irregular and that it was therefore not necessary to give an opinion on the validity of the simplified procedure. In this respect, the Court rejected the argument based on Article 66 of the Treaty which provides, in certain circumstances, for an exception to the exclusive right of the Agency to conclude and for permission to conclude, contracts directly with outside suppliers, but which does not imply that all imports are prohibited as long as Community production is available at prices which are not excessively high. Without giving a detailed opinion on the validity of the simplified procedure the Court observed that it was not contrary to Article 66 since the Agency was entitled to refuse conclusion (point 50).

As to the third submission (the “special provision”), the Court simply noted that the Court of First Instance had made a finding of fact, which could not be challenged in the context of this appeal that Mr Cardoso e Cunha’s letter was no more than a simple indication and did not include any commitment.

The claim for annulment had therefore correctly been rejected by the Court of First Instance. In the absence of any illegality in the Commission’s actions, the Court also rejected the claim for damages.

ADMINISTRATIVE DECISIONS

France

Decree on the Dismantling of the ELA Reactor

Decree No 96-978 of 31 October 1996 authorises the Atomic Energy Commission to modify a former nuclear installation known as the Monts d’Arrée-EL 4 Nuclear Power Plant whose reactor has been permanently shut down, for the purpose of keeping it under surveillance during its intermediate stage of dismantling. The newly modified installation will be called EL-4D and will be used for the storage of materials coming from the Monts d’Arrée-EL 4 NPP.

All structures at the nuclear site, except for the building containing the reactor, will be dismantled in the seven year period following publication of the Decree

For the first time, the Decree contains specific provisions for the management of waste emanating from the dismantling operation, such as the zoning of the installation, the registering and follow-up of the different levels of flux of the waste, and the approval by the safety authorities of the various waste disposal channels

Moreover the Decree specifies that not later than three years after publication the operator must submit to the Ministers of Environments and Industry a study describing the different options being considered for the permanent dismantling of the installation

NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

Argentina

General Legislation

National Law on Nuclear Activities (1997)

Law No 24 804 was approved by the Senate on 2 April 1997. This Law aims to establish a regulatory framework for all nuclear activities, in line with the policy for the reform of the State, which includes the re-organisation of the public sector and the consequent privatisation of production activities, including production of nuclear power.

The first Section of this Law declares that all nuclear activities in the nature of commercial production or research and development with a commercial goal may be conducted either by the State or by the private sector.

Chapter I largely repeats the contents of the old Decree-Law No 22 498 of 19 December 1956 relating to the organisation of the National Commission for Atomic Energy (see *Nuclear Law Bulletin* No 9). In particular, the present Law revokes Sections 2, 5, 9, 11, 16 and 17 of the Decree-Law of 1956.

In light of the political importance of the privatisation foreseen in Chapter V of the present Law, Section 9 lays down the basic conditions applicable to all natural and legal persons who might undertake a nuclear activity. This concerns, most notably, respecting the directives laid down by the Nuclear Regulatory Authority in matters of radiological and nuclear safety, physical protection and control of the uses of nuclear materials. Particular importance is given to measures concerning the peaceful uses of nuclear energy and non-proliferation.

Further, Section 9(c) refers to the principles of third party liability of the operator in the event of nuclear damage. The Law fixes an amount of US\$ 80 million for each nuclear incident in each installation. This sum will be covered by a financial guarantee or by insurance approved by the Executive or other competent authority. The amount of US\$ 80 million corresponds to the real value of the amount fixed by the Vienna Convention of 1963 (US\$ 5 million gold value, which corresponds to approximately US\$ 60 million in terms of the value of gold as at April 1997). The difference is intended to cover interest and legal costs.

In addition, the Law gives to the National Commission for Atomic Energy jurisdiction over radioactive waste management. Because of the federal structure of Argentina, however, local authorities still have important powers in this area. Thus, Section 12 provides that all new installations for the management of radioactive waste will be subject to prior approval. This permission is given pursuant to the law of the Province with jurisdiction over the selected site for the installation.

Chapter II specifies the functions of the Nuclear Regulatory Authority. This is a new entity separate from the National Commission for Atomic Energy under Decree No 1540/94 (see *Nuclear Law Bulletin* No 54). This same chapter also sets out the Authority's functions, rights and obligations.

Chapter IV provides that responsibility for radiological and nuclear safety, guarantees of non-proliferation, and physical protection stay with the holder of a licence, permit or authorisation regardless of whether the holder has delegated to a third person certain tasks for which the holder was responsible (Section 31). Section 32 provides that the State remains the one and only owner of fissile material contained in irradiated fuel.

Finally, Chapter V, devoted to privatisation, represents the focus of the Law. The production of nuclear power managed by the company, *Nucleoelectrica Argentina*, is subject to privatisation (at present, the company is 100% State owned). It is stated that the production of nuclear power must be considered as integrated. This means that the two nuclear power plants in operation in Argentina, Atucha I and Embalse, as well as Atucha II presently under construction, are a single package for the purposes of their privatisation.

In addition to the obligations described above to be assumed by the eventual private nuclear operator, the producer is expected to contribute to two funds, one for the dismantling of nuclear power plants, the other for the management of radioactive waste. The producer is also expected to pay a tax to support the research and development activities carried out by the National Commission for Atomic Energy and to contribute to the purchase of heavy water made in the country.

Belgium

Organisation and Structure

Application of the 1994 Law relating to the Protection of the Public and the Environment Against Radiation and Relating to the Federal Agency for Nuclear Control (1996)

On 17 September 1996, the Belgian Cabinet of Ministers approved a Royal Decree bringing into force a series of sections of the Law of 15 April 1994 relating to the protection of the public and the environment against the danger of ionising radiation and concerning the Federal Agency for Nuclear Control (See *Nuclear Law Bulletin* Nos 53 and 57).

The sections concern, for the most part, the creation of the Federal Agency for Nuclear Control as a public body with legal personality, and, in particular, its Council of Administration. The Council of Administration will be composed of a President and thirteen members. They are appointed by the King for a renewable period of six years. The members of the Council have been officially named by a Royal Decree of 14 January 1997. The two above-mentioned Decrees were published in the *Moniteur belge* of 4 March 1997.

At the present time, the parts of the Law of 1994 relating to the definition of the Agency's tasks and its financial resources have not yet entered into force.

Brazil

Regime of Nuclear Installations

Order Relating to Nuclear Safety Policy (1996)

Order No 295 of 23 December 1996, of the National Commission for Nuclear Energy, aims to ensure that the licensing, supervision and operation of nuclear installations and installations using radioactive sources are carried out with due regard to the principles of nuclear safety

The Order recognises that the Commission, as a government agency responsible for the licensing and supervision of nuclear power plants, is required to take into consideration both economic and safety principles when making decisions or preparing directives

The Order was published in the *Diario Oficial* of 27 December 1996

Third Party Liability

Law Relating to a Special Pension for the Victims of the Accident at Goiania (1996)

On 24 December 1996, the National Congress adopted Law No 9 425, which provides for the grant of a life pension to compensate persons exposed to Cesium 137 following the accident at Goiania, in the State of Goràs

Section 2 of the Law sets out the amounts due to the victims, depending on the radiation doses to which they were exposed. A special indemnity is also provided for children born with physical abnormalities resulting from the accident. In addition, employees of the health inspection service, who at the time of the accident were on call, will undergo medical examinations to establish their level of irradiation. Depending on the results of the examination, they will be considered as victims of the accident with a right to the special pension.

The Law entered into force on 26 December 1996, the date of its publication in the Official Journal.

Czech Republic

General Legislation

Act on the Peaceful Uses of Nuclear Energy and Ionising Radiation (Atomic Act) (1997)

On 24 January 1997 the Senate of the Czech Republic approved the "Act on the Peaceful Uses of Nuclear Energy and Ionising Radiation and on an Alteration and Amendment of Related Legislation", just one month after its approval by the Czech Parliament Chamber of Deputies on 20 December 1996 (*Collection of the Czech Laws No 18/1997/Coll February 1997*. See also *Nuclear Law Bulletin* No 56)

The comprehensive Act has, as its main purpose, the regulation and control of all activities related to the utilisation of nuclear energy in the Czech Republic and ensuring the protection of the

public and the environment against the harmful effects of ionising radiation. Its provisions are based on internationally accepted principles of nuclear safety and radiation protection recommended by the IAEA, ICRP, WHO and other international bodies, in order to ensure that the Act will reflect similar nuclear energy legislation in effect in OECD countries.

The provisions of the Act aim to ensure the proper functioning of an effective supervisory structure in line with a systematic licensing regime in order to guarantee efficiency, credibility and reliability of regulatory decisions and operational performance of nuclear undertakings.

The Act contains four parts and 50 articles. Part I contains the main body of the Act and lays down the general conditions for activities related to the use of nuclear energy and ionising radiation, the rules related to radioactive waste management and civil liability for nuclear damage. Part I also covers State supervision and penalties.

Parts II-IV are devoted entirely to necessary modifications and amendments of related legislation of the Czech Republic, while Part V contains some general transitional and final provisions. The Act also has an Annex, which is comprised of 15 articles listing the documentation required for particular licensed activities pursuant to Article 13 of the Act.

As a result of the adoption of the new Act, 14 previously adopted pieces of nuclear energy legislation (two laws, seven Decrees, five Directives) will be repealed and 17 new regulations implementing the provisions of the Atomic Act are currently being drafted.

The Act will enter into force on 1 July 1997, with the exception of Section 4 concerning radioactive waste management and Section 5 concerning civil liability for nuclear damage, which entered into force on the date of publication of the Act in February 1997. The same is true for Article 48 of the Act, which deals with the mechanism and scheduling for the transfer of responsibilities for radioactive waste repositories to the newly created Radioactive Waste Repository Authority.

France

Radiation Protection

Modification of the 1975 Decree for the Protection of Workers Against the Dangers of Ionising Radiation in Basic Nuclear Installations (1997)

The primary objective of Decree No. 97-137 of 13 February 1997 is the reorganisation of the medical supervision of "outside" (contract) personnel working in basic nuclear installations (INB). This required a modification of Decree No. 75-306 of 28 April 1975 (see Nos. 9, 16, 20, 41 and 42 of the *Nuclear Law Bulletin*).

To improve the medical supervision of these workers, the new text permits a dispensation from the provisions of Article R 237-19 of the Labour Code. Those provisions require the in-house doctor of the enterprise using such workers to carry out, on behalf of the enterprise contracted to do the work (i.e. the employer of the outside workers), additional examinations necessitated by the nature and duration of the work. The results of these examinations are to be communicated to the doctor of the enterprise contracted to do the work, in order to determine the fitness of such workers to perform their assigned tasks.

Under the new arrangement, the medical supervision of workers in category "A" (workers assigned tasks with exposure to radiation) or category "B" (workers assigned tasks not directly subject to radiation exposure) employed by outside contractors and working at a basic nuclear installation, will be carried out by the medical service of the outside contractor or by that retained by it, provided that such medical service is qualified as competent by the Regional Director of Work, Employment and Professional Training for that locale

This qualification is only given to workplace medical services which employ doctors with specialised training. These doctors will ensure proper medical supervision of the above-mentioned workers and delivery of their certificates of fitness

In cases where the workplace medical service of the outside contractor or that retained by it does not qualify, the medical supervision of its workers will be carried out by the medical service of the enterprise where the work is to be performed. The minimum time devoted by these doctors to this supervision is calculated at the rate of one hour per month for five employees

The conditions for carrying out the supervision are to be set out in an agreement between the head of the outside contractor and the user of its services. This agreement is to be transmitted, for information, to the Regional Director of Work, Employment and Professional Training. It may be attached to the prevention plan provided for in Section 237 17 of the Labour Code

The workplace doctor of the establishment responsible for the assessment of the internal exposure of the workers is to send the results of that assessment to the workplace doctor of the outside contractor and is to provide first aid in the event of an accident

This new Decree also modifies the procedure for providing information when changes are made to the installation. Where significant modifications or works are to be undertaken in the installation, the head of the establishment, who was previously to inform the establishment's workplace doctor and health and safety committee, must henceforth also inform the heads of outside contractor organisations

Regime of Radioactive Materials (Including Physical Protection)

Decree Specifying Conditions for the Allocation of Nuclear Materials to Defence Purposes (1996)

The Decree of 24 September 1996 (published in the *Journal Officiel* of 1 October 1996) abrogates and replaces the Decree of 15 May 1981 setting out the conditions for allocating nuclear materials to defence purposes

The modifications are principally aimed at clarifying the situation in respect of materials used in military nuclear programmes or other conventional arms systems. Under the terms of this new Decree, these materials are to remain under defence jurisdiction until the cessation, dismantlement or destruction of the arms of which they form part. At that point, these materials will revert to civil jurisdiction

Environmental Protection

Law on Air and the Rational Use of Energy (1996)

Law No 96-1236 of 30 December 1996 on air and the rational use of energy is in a general manner, intended to put in place a common policy for the State, for public establishments and for local communities the objective of which is to respect the right of everyone to breath air that is not harmful to their health This objective of improving air quality must be realised apart from any action for the prevention, monitoring, reduction or elimination of atmospheric pollutants by the rational management and use of energy

The Law takes into account the provisions of Directive No 96/62/CEE of 27 September 1996 concerning the assessment and management of ambient air quality

It is aimed at atmospheric pollutants, which are formed, in the sense of the Law, by the introduction by man, directly or indirectly, into the atmosphere and closed spaces of substances having prejudicial consequences for nature, which put human health in danger, are harmful to biological resources and to ecosystems, have an influence on climate change, cause deterioration of property and provoke offensive odours ”

However, the discharge of gaseous radioactive waste coming from basic nuclear installations and nuclear installations established on the same site remain subject to Decree No 95-540 of 4 May 1995

The conditions for the construction, operation and supervision of basic nuclear installations remain subject to the provisions of Law No 61-842 of 2 August 1961, in respect of the fight against atmospheric pollution and odours, and to the Decree of 11 December 1963 for its application

Germany

General Legislation

Amendment of the Revised 1959 Atomic Energy Act (1996)

Section 9(b), paragraph 1 of the Atomic Energy Act has been amended by Article 4 of the Federal Act of 12 September 1996 to expedite licensing procedures (Licensing Procedures Expedition Act, *BGBI* 1996 I, p 1354, the 1959 Act as revised in 1985 is reproduced in the Supplement to the *Nuclear Law Bulletin* No 36) The Federal Act aims at enabling the competent authorities to speed up licensing procedures by replacing, in certain cases, the complicated and time consuming ‘Planfeststellungsverfahren’ (approval procedure) with a simplified ‘Plangenehmigung’ (licensing procedure)

The amended Section 9(b) deals with the approval procedure for a federal radioactive waste disposal facility allowing the authority to issue a simple licence, provided the applicant requires only a modification of an existing facility, and provided that the modification does not entail any prejudicial effects with regard to matters protected by the Act of Environmental Impact Assessment (see *Nuclear Law Bulletin* No 45)

Radiation Protection

Amendment of the Radiation Protection Ordinance and of the X-Rays Ordinance (1996)

The Radiation Protection Ordinance of 1989, as amended in 1993 (*Nuclear Law Bulletin* Nos 44 and 52) and the X-Rays Ordinance of 1987, as amended (see *Nuclear Law Bulletin* Nos 39 and 47) have been amended by the Ordinance of 25 July 1996 (*BGBI* 1996 I, p 1172)

The amendments deal with transitional provisions in Article 88, paragraph 10 of the Radiation Protection Ordinance and Article 45, paragraph 9 of the X-Rays Ordinance, respectively, which permit the continued employment of certain categories of occupationally exposed workers until 31 December 1995. The deadline has now been extended by the 1996 amendment to 31 December 2000.

Ordinance to Implement the Federal Act on Protection Against Radiations (1996)

The 26th Ordinance to implement the Federal Act on Protection against Radiation (Ordinance of 16 December 1996 on Electromagnetic Fields, *BGBI* 1996 I, p 1966) provides for protection against the so-called electrosmog. It applies to the construction and operation of high and low frequency installations which are used for commercial purposes and which do not need a license under Section 4 of the Federal Act on the Protection against Radiation. The Ordinance establishes requirements to be met by the operators and imposes on them the duty to notify the competent authorities of the operation of such a facility.

Transport of Radioactive Materials

Ordinances on the Transport of Dangerous Goods (1996)

Further to the 1995/1996 legislative developments in the field of transportation of dangerous goods (*Nuclear Law Bulletin* No 57), the Federal Minister of Traffic issued another series of relevant Ordinances in 1996 which cover a variety of dangerous goods, including radioactive substances.

The Third Ordinance of 31 May 1996 (*BGBI* 1996 I, p 744), aims to amend the Dangerous Goods Exception Ordinance of 23 June 1993, as amended.

With respect to transport by road, several amendments were made which deal with the revision of Annexes A and B to the European Agreement on the International Carriage of Dangerous Goods by Road (ADR), for example, the 23rd Ordinance of 31 May 1996 on Exemptions from the Provisions of Annexes A and B to the ADR (*BGBI* 1996 II, p 921) and the 13th Ordinance of 17 July 1996 to amend the Annexes (*BGBI* II, p 1178). In addition, the Ordinance of 12 December 1996 on the Internal and Border Crossing Transportation of Dangerous Goods by Road (Dangerous Goods Ordinance, Road, *BGBI* I, p 1886) implements the EC Directive 94/55/EC of 21 November 1994 (*OJEC* No L 319, p 7) and replaces the Ordinance of 18 July 1995.

With respect to transport by railroad, the Sixth Ordinance of 26 November 1996 (*BGBI* 1996 II, p 2701) aims to amend the Regulations for the International Transport of Dangerous Goods by Rail (RID). The Ordinance of 12 December 1996, on the Internal and Border Crossing Transportation of Dangerous Goods by Rail (Dangerous Goods Ordinance Railroad, *BGBI* 1996 I, p 1876), implements the EC Directive 96/49/EC of 23 July 1996 (*OJEC* No L 235, p 25) and replaces the Dangerous Goods Ordinance Railroad of 15 December 1995.

Finally, with regard to the transport by inland waterways, the Second Ordinance of 20 December 1996 was issued to amend the Dangerous Goods Ordinance-Inland Waterways of 18 January 1996 (*BGBI* 1996 I, p 2178)

Regulations on Nuclear Trade

Amendments to Foreign Trade Act and the Foreign Trade Ordinance (1996)

By the 9th Act of 11 December 1996 (*BGBI* 1996, p 1850), some minor changes have been introduced into the Foreign Trade Act (see *Nuclear Law Bulletin* Nos 46 and 54) The amendment of Sections 33, 34 and 38 provides for a strengthening of the penal provisions of the Act

The Federal Government issued a series of amendments to the Foreign Trade Ordinance 1995 (see *Nuclear Law Bulletin* Nos 49 and 57) which are consequential to the respective EC-Regulations The Import-List Annexes to the Foreign Trade Ordinance have been amended by the 131st, 132nd and 133rd Ordinances of 25 June 1996, 15 October 1996 and 18 December 1996 respectively (*Bundesanzeiger* 1996, p 7381, 8253 (corr), 11 665, 13 389) In addition, the Export-List Annexes AL to the Foreign Trade Ordinance have been amended by the 89th and 90th Ordinances of 25 June 1996 and 23 October 1996, respectively (*Bundesanzeiger* 1996, p 7382, 11 8809)

The Federal Export Office amended and published General License No 11 regarding the export of goods with dual use character on 20 November 1996 (*Bundesanzeiger* 1996, p 12 518)

Greece

General Legislation

Implementation of European Directives into Domestic Law (1996/1997)

Two Decrees aimed at incorporating into Greek national legislation two European Directives in the nuclear field were adopted on 13 September 1996 and 27 February 1997, respectively

The first Ministerial Decree No 9087 (FOR)1004 implements Directive 90/641/Euratom relating to the operational protection of contract workers exposed to ionising radiation in the course of their work in a controlled zone This Directive introduced a system of radiological supervision appropriate to contract workers most exposed.

The second, Presidential Decree No 22, concerns the implementation of Directive 92/3/Euratom relating to the supervision and control of shipments of radioactive waste between Greece and other Member States of the European Union, as well as the entry to and exit from the Union This Directive establishes the procedure to be followed in advance of any shipment both by the State of origin and that of the destination This procedure varies according to whether the shipments are effected within the Union or outside of it

Hungary

General Legislation

*Atomic Energy Act (1996)**

On 10 December 1996 the Hungarian Parliament, after long debate, adopted the new Hungarian Atomic Energy Act which replaces the 1980 Atomic Energy Act. While preserving the essentials of the 1980 Act, the new 1996 Atomic Energy Act aims to conform with recent international rules and standards in this field.

The Act aims to regulate all activities connected with the peaceful utilisation of nuclear energy, with the exception of some activities which, due to the small extent of the risk involved, do not create hazards to human life. Since the new Act is, in some respects, a legislative framework which sets forth the basic principles governing the peaceful uses of nuclear energy, its enactment made it necessary to adopt a series of new legislative regulations and to amend certain existing laws and regulations. This process is still underway and will, in all probability, continue even after the entry into force of the Act. According to Article 66, paragraph 1 of the Act, the Act will enter into force six months following its publication, *i.e.* on 19 June 1997, with the exception of Articles 62-64 (the provisions concerning the Central Nuclear Financial Fund) which will enter into force on 1 January 1998.

The purpose of the new Act is not only to modernise Hungarian nuclear law, but also to harmonise Hungarian domestic law with major international nuclear conventions to which Hungary is a State party. The basic principles of the Act are to protect the population against the hazards generated by the peaceful uses of nuclear energy, and to improve the safety of all nuclear activity.

The Act consists of six chapters and 68 articles. The first chapter contains definitions of terms such as nuclear material, nuclear installation, nuclear wastes, etc. Instead of the term "operator" of nuclear installations the Act uses the term "licensee" to refer to the legal person possessing the licenses of the competent authorities required for nuclear activities. Furthermore, the definition of nuclear damage includes not only loss of life, health impairment and damage to property, but also the costs of measures of reinstatement of impaired environment arising concurrently with loss of life, health impairment or damage to property. The definition of nuclear damage comprises the costs connected with mitigation of damages and preventive measures, in both cases only the costs of reasonable and necessary actions are covered.

With respect to decision making and regulatory bodies, according to the Act the Government is primarily responsible for the control and supervision of the safe utilisation of nuclear energy. Article 6, paragraph one provides that the governmental function is vested in the National Atomic Energy Commission and in the National Atomic Energy Authority.

Chapter III contains provisions on the licensing procedure and on the competence of different authorities in that process. The Act envisages the preliminary consent of Parliament for the construction of a new nuclear installation, including the establishment of radioactive waste disposal.

* This note was kindly prepared by Professor Vanda Lamm, Institute for Legal and Administrative Sciences of the Hungarian Academy of Sciences.

facilities and for the enlargement of an existing nuclear installation Any change of ownership of nuclear installations is subject to the preliminary decision of the Government

The liability of the licensee is unconditional, however, he shall not be liable for nuclear damage caused by a nuclear incident directly due to an armed conflict, war, civil war armed uprising or a grave natural disaster of an extraordinary character

The ceiling of the licensee's liability is 100 million SDR's, in case of an incident in a nuclear power plant, but it will be much lower, 5 million SDR's, for incidents occurring during the carriage of nuclear materials If the amount of 100 million SDR's proves insufficient for compensation of all victims, an additional amount of 200 million SDR's will be paid by the State from public funds In essence, the amount of 300 million SDR's, inclusive of the supplementary contribution of the State is that which, during the ongoing revision of the 1963 Vienna Convention, the majority of delegates proposed for acceptance as the minimum amount of liability for States parties thereto The licensee should, by insurance or other means of financial security ensure its financial obligations

The licensee is liable for nuclear damage involving lost, stolen, jettisoned or abandoned nuclear material for a rather long period, namely, 20 years starting from the date of the nuclear incident The extinction period of liability for other nuclear damage is 10 years, which is twice the period of prescription under the general liability rules of Hungarian civil law and much longer than that established for damage resulting from activities involving major hazards

A separate part of the Act deals with questions connected with nuclear waste and spent fuel The Act expressly states that the costs of the temporary and final disposal of nuclear waste should be covered by the licensee The Act also regulates the shutdown of nuclear installations as it provides that the licensee has to cover the costs of the decommissioning of its nuclear installation The Act envisages the establishment of a Central Nuclear Financial Fund as a separate public fund aiming to ensure appropriate resources for financing the final storage of nuclear waste and spent fuel as well as for decommissioning of nuclear installations The financing of this Fund is intended to be secured mainly from regular contributions by the licensees

Indonesia

General Legislation

Replacement of the Atomic Energy Act (1997)

On 26 February 1997 the Indonesian Parliament passed a nuclear energy law which repealed and replaced the Atomic Energy Act of 1964 The new legislation sets out the legal framework for nuclear energy activities in that country, and in particular for the separation of the promotion and regulatory functions within the industry, as well as providing for third party liability

Prior to the new legislation, the National Atomic Energy Agency (BATAN) was the only governmental authority in the field, and it both promoted and regulated nuclear activities The new law establishes two agencies, one for the promotion of nuclear energy (BATAN) and the other for its regulation (BAPETEN) This second agency, the National Atomic Energy Regulatory Organisation is an autonomous organisation, which will supervise nuclear safety amongst other regulatory functions

As regards promotion of nuclear activities, the legislation widens the number of prospective participants in commercial nuclear activities. These activities (e.g. production of radioactive isotopes) will now be undertaken by public and private companies, rather than only by BATAN as was formally the case. They include the production of nuclear fuel and the development and operation of nuclear power plants. It is envisaged that research and development in the field of nuclear energy will be the responsibility of BATAN, as the promotion agency.

Regulation of nuclear activities by BAPETEN will be undertaken through licensing and inspection systems. Thus, the development, construction, commissioning and operation of nuclear reactors, nuclear installations and installations using ionising radiation sources will require the necessary licences. Inspection of such facilities will be undertaken by Inspectors assigned by BAPETEN.

There is a provision for indemnification of third parties in the event of a nuclear accident, up to a maximum liability of the operator of the nuclear facility of 900 billion Indonesian rupiahs (about US\$ 400 million). This limit can be amended through a Presidential Decree. The operator is required to maintain insurance to cover this prospective liability. This provision does not apply to a Government operator whose liability coverage will be regulated by other means.

Prior to the construction of a new nuclear plant, the Government must seek the opinion of Parliament, and seek advice from the Committee of Nuclear Energy, which consists of experts on nuclear energy and a number of prominent members of the public.

Ireland

Radioactive Waste Management

Dumping at Sea Act Prohibiting the Disposal of Low, Intermediate and High Level Radioactive Substances off the Irish Coast (1996)

The Dumping at Sea Act, 1996, was enacted on 19 June 1996 and replaces the Dumping at Sea Act, 1981. The legislation enforces strict new limitations on the types of substances that can be dumped at sea. It bans incineration at sea and the dumping of toxic, harmful or noxious substances. There is an express prohibition against the disposal at sea of low, intermediate and high level radioactive substances or materials.

The Act also extends the limit of Ireland's control from 12 miles up to 200 miles off the Irish coast and in some cases up to 350 miles off the Irish coast.

Italy

Radiation Protection

Decrees Relating to Radiation Protection of Patients (1997)

Four Decrees have been made by the Minister of Health in applying Legislative Decree No 230/95, relating to the protection of workers and the public against ionising radiation (see *Nuclear Law Bulletin* No 56)

The adoption of these Decrees was required by Sections 110 to 114 of Decree No 230, which envisaged a total of seven. The other three decrees are going to be made before the end of 1997. The four Decrees in question, dated 14 February 1997, relate to the following matters

- the nature, methods and timing of quality control measures carried out by radiophysicians or by experts in the field of radiological equipment and nuclear medicine,
- the criteria for the acceptability of radiological equipment used in medicine and dentistry (including nuclear medicine),
- methods to facilitate the availability of radiological and nuclear medicine documents in pursuing medical conclusions, and
- the identification of sophisticated equipment in the field of radiotherapy and nuclear medicine

The four above-mentioned Decrees were published in the Italian Official Journal of 11 March 1997

Kazakstan

General Legislation

Law on the Peaceful Use of Atomic Energy (1997)

On 14 April 1997 the Law on the Peaceful Use of Atomic Energy was promulgated by the Parliament of Kazakstan. This Law, which constitutes Kazakstan's first general law on the subject, will be discussed in detail in the next *Nuclear Law Bulletin*

Republic of Korea

General Legislation

Revision of the Atomic Energy Act (1996)

The basic legislation for the regulation of nuclear energy utilisation in Korea is Act No 483 of 11 March 1958. Several revisions of this Act have been made since that date, the most recent of which, prior to the 1996 Amendment, was made in 1994 (see *Nuclear Law Bulletin* No 55)

The latest amendment to the Act 30 December 1996 contains the following important changes

- The Atomic Energy Safety Commission is established to oversee nuclear safety matters including national policy issues,
- A Nuclear Research and Development Fund is established to provide stable financial resources for Korea's national nuclear research and development programmes. It is financed by a levy on the operators of nuclear power plants, based on the amount of nuclear power generated in the previous year (Articles 9-3 and 10-3)

Regulations under the Act were also amended to implement the decision of the Atomic Energy Commission, of 25 June 1996, to impose responsibility for national radioactive waste management upon the Korean Electric Power Corporation (KEPCO). As a result, the Radioactive Waste Management Fund, based on a levy on all producers of radioactive waste, including KEPCO, was abolished (Articles 84-2 to 84-5, 85 and 85-3)

In addition, three other amendments should be noted, concerning changes in the procedure for the licensing process for nuclear facilities. The first concerns the requirement for performance verification of components which are functional in the operation of nuclear power reactors (Article 42-2). The second requires the registration, with the Minister for Science and Technology, of persons who intend to carry on a business of providing services related to nuclear activities, such as decontamination of radioactive materials (Article 75-2). The third amendment relates to the environmental impact statement (EIS) which must be submitted when applying for a construction permit. Article 104-5 requires the views of neighbouring residents to be sought as part of the preparation of the EIS.

Latvia

Radiation Protection

Regulation Concerning Licences for Activities Dealing with Radioactive Substances and Other Radiation Sources (1996)

On 20 June 1996 the Cabinet of Ministers adopted the Regulations "On the Issuance of Licenses and Permits for Activities with Radioactive Substances and Other Ionising Radiation Sources" (see *Nuclear Law Bulletin* No 57). These Regulations are made pursuant to Sections 4, 6, 7 and 9 of the

1994 Law on Radiation Protection and Nuclear Safety (the text of this Act is reproduced in the Supplement to *Nuclear Law Bulletin* No 55)

These Regulations establish prior authorisation procedures for all types of radiation applications and empower two bodies to issue licenses and permits, the Licensing Committee of the Environmental State Inspectorate of the Environmental Protection and Regional Development Ministry for all applications except medical, and the Licensing Committee of the Ministry of Welfare for medical applications. The composition of both Licensing Committees includes representatives from supervisory institutions and from relevant ministries.

The Licensing Regulations furthermore introduce several specific requirements. For instance they establish more detailed exemption levels, instead of the previously established general ones based on the values used in the IAEA and EU Basic Safety Standards. Secondly they establish a new mechanism for supplementary financing of radioactive waste management by way of imposing an import duty on all radioactive materials. This import duty will be used partly by local municipalities partly for investments in infrastructure for radioactive waste management, and finally for decommissioning funds.

The Regulations also introduce several other requirements for licence applicants, *inter alia* the requirement of a public hearing for a license for a research reactor or a radioactive waste repository.

Basic Regulations for Protection Against Ionising Radiation (1997)

In April 1997, the Cabinet of Ministers adopted the Basic Regulations for Protection Against Ionising Radiation (see *Nuclear Law Bulletin* No 57)

The Regulations, which are based on the IAEA and EU Basic Safety Standards, also reflect the Euratom Directives 84/466, 87/600, 87/3954, 89/618 and 90/641 and several IAEA Recommendations. Whereas the first part of the Regulations is devoted to the definition of terms, the second part defines the scope of the Regulations and sets up several very important requirements in the field of prohibited applications of ionising radiation and nuclear safety culture. The third part of the Regulations deals mainly with the separation of responsibilities between the various bodies and persons involved in the field, such as the differing responsibilities of owners of ionising radiation sources and regulatory bodies.

Lithuania

General Legislation

Law on Nuclear Energy (1996)

On 14 November 1996 the Republic of Lithuania adopted the Law on Nuclear Energy (No I 1613). The Act consists of 76 articles divided into 14 chapters, each covering a specific area of regulation of nuclear energy related activities.

The objectives of the Law are set out in Chapter I, where it is stated that the Law shall provide a legal basis for the activities of natural and legal persons in the sphere of nuclear energy. It aims to ensure nuclear safety in the peaceful use of nuclear energy by laying down the principles of State regulation of nuclear safety and radiation protection and conditions for the operation and licensing of

nuclear facilities, the export, import and transportation of nuclear materials, radioactive waste management and the control and physical protection of nuclear materials. In addition, the Law also deals with liability for nuclear damage and financial guarantees to ensure compensation for damage, based on the Vienna Convention on Civil Liability for Nuclear Damage.

Finally, the Law also contains a chapter specifically devoted to labour relations in the sphere of nuclear energy (Chapter XIII), which provides for additional labour legislation and disciplinary statutes applicable in nuclear facilities (the text of this Law will be reproduced in the next issue of the *Nuclear Law Bulletin*)

Mexico

Radiation Protection

Federal Regulation relating to Safety, Health and the Environment in the Workplace (1997)

This Regulation, which applies throughout the national territory, was promulgated on 20 January 1997 and published in the Official Journal of Mexico the day following its promulgation. Its objective is to define accident prevention measures in the workplace and to ensure that safety and health conditions for workers conform to those fixed by the Federal Law of Labour.

This Regulation covers all activities giving rise to dangerous work conditions or a risk of worker exposure to physical, chemical or biological agents. Activities which give rise to exposure to ionising radiation are therefore covered by the new Law (See *Nuclear Law Bulletin* Nos 47 and 54). It also establishes the conditions for handling, transporting and storage of dangerous chemical substances, including those which are flammable, explosive, toxic, radioactive, etc.

The Law confers on the *Secretaria del Trabajo y Prevision Social* the authority to adopt Rules for safety and health in the workplace, conforming with the Federal Law of Labour and the Regulation in question. The provisions contained in the Regulation must be respected at each workplace, as much by the employers as the employees, depending on the nature of the activity.

The *Secretaria* must adopt Rules aimed at avoiding

- the creation of a risk or danger to the life, physical well-being and health of workers, and
- a significant change to the environment at the workplace which might effect the safety and health of workers.

These Rules will be drawn up taking into account a series of criteria including, among others, the degree of risk, geographic siting, number of workers, etc.

Moreover, the *Secretaria* is charged with issuing certificates with respect to the safety and health of relevant activities under the Regulation. It can equally revoke them in the event of a breach of their provisions, after a hearing of the interested parties, pursuant to the Federal Law of Administrative Procedure. The Regulation also contains provisions establishing the obligations of employers, on the one hand, and those of employees, on the other hand (Chapters II and III).

Finally, a chapter is specifically dedicated to sources of ionising radiation. Thus, workplaces in which sources of ionising radiation are produced, utilised, handled, managed or transported are subject to prior licensing from the *Comision Nacional de Seguridad Nuclear y Salvaguardias*

Russian Federation

Regime of Nuclear Installations

Legislation in the Field of Nuclear Safety and the Financing of Nuclear Activities (1996/1997)

By Presidential Decree No 1012 "On the Guarantees for the Safe and Sustainable Operation of the Nuclear Power Industry in the Russian Federation" of 7 July 1996, together with other measures, the Russian Government commits itself to provide State guarantees to operating organisations "Rosenergoatom" and to nuclear installations, with the aim of encouraging foreign investment in nuclear safety

The Presidential Decree of the Russian Federation of 21 January 1997 "On the Federal Organs of Executive Power Authorised to Implement the State Safety Regulation for the Utilisation of Nuclear Energy" is directed at federal agencies, such as the Federal Nuclear and Radiation Safety Supervisory Committee (Gosatomnadzor), the Ministry of Health, the Federal Mining and Industrial Supervisory Committee (Gosgortekhnadzor) and the Ministry of Interior Affairs, as well as agencies authorised to implement State regulation of radioactive and technical and fire safety in the utilisation of nuclear energy

In accordance with the Law "On Financing Production Sites and Facilities Posing Particular Radiation and Nuclear Hazards", the Government of the Russian Federation enacted on 28 January 1997 the Statute "On the Formation of Centralised Funds and their Utilisation for the Financing of Conversion Activities from Defence Industries to Specific Dangerous Radiation and Nuclear Industries and Objects" and also the Statute "On the Formation of Centralised Funds and their Utilisation for the Financing of Scientific Research, Experimental Construction and Project Research Activities Executed with the Aim to Perfect the Technology and Enhance the Safety of the Functioning of Particular Dangerous Radiation and Nuclear Industries and Objects"

Radiation Protection

Act on the Radiation Safety of the Public (1997)

On 28 January 1997, the Federal Law on the Radiation Safety of the Public of 9 January 1996 entered into force (see *Nuclear Law Bulletin* No 58). The entry into force was subject to the adoption by the Government of related implementing Regulations on the development of radiation-health certificates for organisations and territories

Nuclear Material

Regulation on Nuclear Materials (1996)

On 14 October 1996, the Russian Government adopted a Regulation on a system for State accounting of nuclear materials. This Regulation aims to set up a system for State accounting and

supervision of nuclear materials in order to perfect their safe keeping. This Regulation is part of the framework of other Presidential Decrees already adopted (see *Nuclear Law Bulletin* No 58)

Non-Proliferation

Regulation on Nuclear Weapons (1996)

On 24 June 1996 the Russian Government adopted the Regulation "On the Regime for the Implementation of International Agreements in the Area of Safe Storage and Transport of Nuclear Weapons in the Russian Federation in Relation to their Reduction". The Regulation aims to define the participation of the Russian Federation in international co-operation in this area.

Switzerland

Third Party Liability

Modification of the Ordinance on Third Party Liability in Nuclear Matters (1996)

On 2 December 1996, the Swiss Federal Council modified the Ordinance of 5 December 1983 on third party liability in nuclear matters (See *Nuclear Law Bulletin* Nos 23, 25, 29, 31, 33, 37 and 47). The modification affects Section 3, relating to the amounts insured and procedural expenses, and Section 5 concerning contributions. The modification entered into force on 1 January 1997 (RS 732 441).

The modification provides that for nuclear installations, the amount insured by private companies will be raised to at least 700 million Swiss francs, plus 70 million francs for interest and procedural expenses. Previously, these sums were, respectively, 500 and 50 million francs. The cover provided by the Confederation remains fixed at 1 billion francs. The raising of the private insurance cover from 500 million to 700 million francs reduces the federal insurance cover from 500 million to 300 million francs. As a consequence, the premiums due to the Confederation, expressed as a percentage of private insurance premiums, amount to 108 % for the nuclear power stations compared to 160% before. For the other nuclear installations (25%) and for the transport of nuclear substances (100%), the percentages remain the same.

In accordance with Section 11(2) of the federal Law of 18 March 1983 on third party liability in nuclear matters, the Federal Council is required to raise the amount of minimum cover, when the private insurance market offers a higher cover, on acceptable terms.

The reduction of the Confederation's premiums arises from the increase of those due under the private insurance. In effect, because the total cover (private insurance and Confederation cover) of one billion francs stays the same, it would be inequitable to raise the total amount of premiums when the cover and the risk remain unchanged.

The coverage, by private insurance, of damage resulting from an accident during the transport of nuclear substances remains fixed at a minimum of 50 million francs, with any excess, up to 1 billion francs, being covered by federal insurance.

United Kingdom

Organisation and Structure

Privatisation of AEA Technology plc (1996)

On 7 March 1996 the United Kingdom Atomic Energy Authority (a statutory corporation established under the Atomic Energy Authority Act 1954) made a scheme pursuant to the Atomic Energy Authority Act 1995, which provided for the transfer of the property rights and liabilities comprised in the commercial division of the Authority to a company wholly owned by the Crown and registered by the name of AEA Technology plc. The scheme came into force on 31 March 1996.

The principal activities of the company following the transfer were (i) engineering services (including decommissioning, engineering design, project management, safety and waste management services for the United Kingdom and overseas nuclear industry), (ii) consultancy services aimed at solving safety, environmental and plant performance problems in the nuclear, defence oil and gas and power industries, (iii) laboratory and field-based experimental and testing services aimed at improving the performance and design of plant, particularly in the nuclear oil and gas sectors and (iv) supply of specialist hardware and software products (including remote handling equipment, radiation monitoring systems etc.)

On 10 September 1996, a Prospectus was published offering the shares of AEA Technology plc for sale by way of public flotation. The sale took place on 26 September 1996 when the shares were listed on the London Stock Exchange.

Following the privatisation of AEA Technology plc, the Authority's main function is the safe and cost-effective maintenance and decommissioning of its redundant nuclear facilities and sites. It is also responsible for fusion research.

United States

Organisation and Structure

Privatisation Plan for U S Enrichment Corporation (USEC) (1996)

Under the Energy Policy Act of 1992, the U S Enrichment Corporation (USEC) was established to lease enrichment facilities owned by the Department of Energy. Although the corporation was established as a wholly owned government entity, the Act directed that a privatisation plan be developed. Accordingly, provisions regarding the privatisation of USEC were included in the omnibus appropriations bill for fiscal year 1996, which was signed into law as Pub. L. No. 104-134 by the President of the United States on 26 April 1996. Some of the privatisation provisions in the legislation concern State and compact (interstate arrangement) liability for the disposal of low-level radioactive waste generated by USEC. The provision states that "no State or interstate compact shall be liable for the treatment, storage, or disposal of any low-level radioactive waste (or mixed waste) attributable to the operation, decontamination, and decommissioning of any uranium enrichment facility."

USEC states in its 1996 annual report that it is prepared to implement the privatisation plan which was submitted to the President and Congress in June 1995. The plan proposes a dual-path approach to the privatisation simultaneously pursuing a negotiated sale to private investors and an initial public offering of the Corporation's common stock. Implementation of the privatisation plan requires approval of the President. USEC expects to privatise in 1997.

Radioactive Waste Management

U S Draft Legislation on Spent Nuclear Fuel and High-Level Radioactive Waste (1997)

On 21 January 1997, the Chairman of the Senate Committee on Energy and Natural Resources, introduced the draft Nuclear Waste Policy Act of 1997 (S-104) to replace the Nuclear Waste Policy Act of 1982, as amended. In light of a number of objections on the part of the Federal Administration several amendments have been proposed to achieve a compromise.

The proposed amendments concern time factors, certain licensing requirements and the exclusion of certain sites in South Carolina and Tennessee from being considered for an interim storage facility. The amendments would set a more stringent standard for radiation protection (from releases of radioactive material in the vicinity of Yucca Mountain) by prohibiting an annual dose in excess of 30 millirems, rather than 100 millirems, as originally proposed. They would also extend the time frame for submitting a "viability assessment" of the Yucca Mountain site from June 30, 1998 to December 1, 1998.

Title I of the proposed legislation establishes the obligation of the Secretary of Energy to develop and operate an "integrated management system" for acceptance, transportation, storage and permanent disposal of spent nuclear fuel and high-level radioactive waste. The Secretary would be required to begin accepting spent nuclear fuel from facilities designated by the contract holders (utilities parties to the Standard Contract under the Nuclear Waste Policy Act of 1982) and commence storage at a licensed interim storage facility by 30 November 1999.

This draft law, if adopted, would not modify any rights of the Standard Contract holders under the Nuclear Waste Policy Act of 1982, nor have any effect on lawsuits pending in the U S Court of Appeals for the District of Columbia Circuit (*Northern States Power v U S Department of Energy*)*.

The proposed legislation will be fully examined in the next edition of the *Nuclear Law Bulletin*.

* See Case Law in this edition of the *Nuclear Law Bulletin*.



INTERNATIONAL REGULATORY ACTIVITIES

OECD Nuclear Energy Agency

Collective Opinion on the Safety of Nuclear Installations (1996)

In a “collective opinion” recently published on state-of-the-art nuclear safety research in OECD countries, the NEA Committee on the Safety of Nuclear Installations (CSNI) notes that funding levels of government safety research programmes have been reduced over recent years in several Member countries and warns against the risks of cut-backs in this field

In spite of the satisfactory safety level of nuclear power plants in OECD countries and the advances made in technologies basic to the resolution of safety issues, there is a consensus in the international community that there is potential for further improvement

In the field of nuclear power safety, government agencies in OECD countries have broadly similar responsibilities. Care is needed to ensure that reductions in funding of nuclear safety research do not have an adverse impact on the ability of government agencies to fulfil their safety responsibilities

The untimely shutdown of large research facilities and the break-up of experienced research and analytical teams involve the risk of a loss of competence and reduced capability to deal quickly and efficiently with future safety problems. The lack of large research facilities will make it more difficult to understand complex severe accident phenomena, to verify and validate computer codes, to clarify uncertainties, and to demonstrate the validity of severe accident management strategies. Maintaining adequate levels of expertise will be one of the key issues for future nuclear power development

Seminar on Nuclear Liability and Insurance Issues in Russia (1997)

An International Seminar on Nuclear Liability and Insurance Issues was held in Moscow from 15 to 17 April 1997, to assess the potential benefits that the Russian Federation would derive from joining the system of international nuclear liability conventions, adapting its relevant legislation and setting up appropriate nuclear insurance structures. Organised under the joint sponsorship of the OECD Nuclear Energy Agency (NEA) and the Gosatomnadzor (the Russian nuclear regulatory agency), the Seminar brought together senior-level representatives from the Russian Ministries of Atomic Energy, Finance and Foreign Affairs and various other governmental Agencies with interests in the nuclear field, as well as officials from a number of OECD countries and from international organisations such as the IAEA and the European Commission. Also participating in the Seminar were specialists from both the Russian and western nuclear and insurance industries

The Seminar focused on the international principles of nuclear liability law and their incorporation into Russian legislation, the systems and methods by which Russian insurance companies may provide coverage against the risk of damage arising from a nuclear incident and the financial aspects of assessing nuclear risk and providing such insurance coverage. An important objective of the Seminar was the discussion of the creation, in the near future, of a national nuclear insurance pool.

The resolution of these legal issues is also considered essential to the efforts by OECD countries to provide nuclear safety assistance to Russia. The international principles of nuclear liability law which provide for the strict and limited liability of the operator of a nuclear installation in the event of a nuclear incident, the channelling of all such liability exclusively to that operator, and the requirement that the operator have adequate insurance or other form of financial security to support liability claims, are embodied in two international conventions on civil nuclear liability: the Paris and Vienna Conventions. Although Russia signed the Vienna Convention on 8 May 1996, it has not yet ratified it nor incorporated the principles of that Convention into its national legislation.

The Seminar provided a unique opportunity for the Russian participants to thoroughly examine the methods for the evaluation and control of nuclear damage, the requirements for establishing a Russian nuclear insurance pool and for obtaining re-insurance coverage from the Western nuclear insurance industry, and finally, the ways in which particular insurance coverage might be obtained for exceptional situations, such as emergencies.

European Union

Decision Concerning the Control of Exports of Dual Use Goods (1996)

On 22 October 1996, the Council of the European Union took Decision No. 96/613/PESC relating to common action for the control of exports of dual use goods. This Decision, adopted on the basis of Article J3 of the Treaty of the European Union, modifies Decision No. 94/942/PESC on the same subject, and aims to bring up to date the lists of goods appearing in the annexes of the Decision of 1994.

More precisely, the Decision replaces the five annexes of the earlier Decision concerning dual use goods made subject to export control from European territory.

The Decision was published in the *OJEC*, No. L278 on 30 October 1996 and entered into force on the date of its publication.

The Seveso Directive II (1996)

The EC Council Directive 96/82 of 9 December 1996, concerning the control of risks arising from major accidents involving hazardous substances, abrogates and replaces the Seveso I Directive of 1982 as from 3 February 1999, the date set for its entry into force (*OJEC* of 14 January 1997, No. L10/13). The arrangements will no longer only be applicable to certain industrial installations but to all establishments where there are hazardous substances "in sufficiently important quantities to create a danger of a major accident".

As a result, although hazards linked to ionising radiation are excluded from the new Directive, it is not certain that nuclear installations themselves will be excluded. In fact, these installations, from now on, may be subject to the new Directive as regards risks other than those linked to ionising radiation.

The new Directive provides, in particular, that member States ensure that each operator prepares a document defining its accident prevention policy and that it put this policy into practice. It also imposes an obligation on the operator to present a safety report, the minimum content of which is set out in an annex to the Directive. Moreover, the report must contain details of an internal emergency plan setting out the measures to be taken in case of a major incident.



AGREEMENTS

BILATERAL AGREEMENTS

Bulgaria–Russian Federation

Agreement for Co-operation in the Field of Nuclear Safety (1996)

On 24 October 1996, the Committee on the Use of Atomic Energy for Peaceful Purposes of the Republic of Bulgaria and the Federal Nuclear and Radiation Safety Authority of the Russian Federation concluded an Agreement for Co-operation, which entered into force on the same date

The Agreement aims to establish a regime for co-operation in the field of nuclear safety between the responsible bodies of the two countries, particularly in the area of State regulation and control of the peaceful uses of nuclear energy

This will include co-operation with regard to the organisation and analysis of the safety reports of nuclear facilities in Bulgaria and the Russian Federation prepared for international organisations or third States. In addition, both bodies agreed to align their practices of inspection, enforcement measures and sanctions

Furthermore, it was agreed that there be co-operation in the safe transportation of nuclear materials. Collaboration of both bodies will also extend to the development, application and periodical review of rules and standards for nuclear and radiation safety

Finally, co-operation will be extended to mutual supervision of the system of accounting and control of nuclear material and products on each country's territory, on the control and treatment of ionising radiation sources, the management of radioactive waste and nuclear spent fuel, their utilisation and final storage as well as quality control of nuclear equipment

Germany–United States

Agreement on the Exchange of Technical Information and Co-operation in the Field of Reactor Safety Research and Development (1995)

On 13 December 1995 the German Federal Minister of Education, Science, Research and Technology and the United States Nuclear Regulatory Commission concluded an Agreement on the Exchange of Technical Information and Co-operative Arrangements in the Field of Reactor Safety and Research Development (*BGBI*, 1996 II, p. 542). The Agreement aims at continuing co-operation in

the field of reactor safety in accordance with the provisions of the Agreement and on the basis of reasonable equality and reciprocity

The Agreement entered into force upon the later of the dates of signature of the Parties and will remain in force for a period of 5 years, unless extended by written agreement of the Parties (Article 9)

Article 2 of the Agreement sets out the forms of co-operation, which include the exchange of technical reports and other data, the temporary assignment of personnel and the performance of joint programmes and projects. The Parties may also agree on any other form of co-operation.

Mexico—United States

Arrangement for the Exchange of Technical Information and Co-operation in Nuclear Safety and Research Matters (1997)

This Arrangement entered into force on its date of signature, 5 March 1997, and will remain in force for a period of 5 years. It may be extended for a further period by written agreement of the Parties. The purpose of the Arrangement is to facilitate the exchange of information between the United States Nuclear Regulatory Commission (USNRC) and the Mexican *Comision Nacional de Seguridad Nuclear y Salvaguardias* (CNSNS). The information to be exchanged relates to the regulation of safety and radiological environmental impact of designated nuclear facilities and to the program of nuclear safety research. It is a continuation of arrangements concluded during the 1980s for the exchange of information and co-operation.

Under the Arrangement, the Parties undertake to co-operate in the following areas:

- technical information exchange (relating to reactor safety research and radiological environmental effects, licensing process, etc),
- nuclear emergencies (reaffirming their co-operation obligations under the Vienna Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency),
- plans for locating commercial nuclear facilities near the border (pursuant to a Co-operation Agreement signed on 14 August 1983),
- nuclear safety research (to be considered on a case by case basis, with implementation either by separate agreement or exchange of letters), and
- training and assignment of qualified personnel

MULTILATERAL AGREEMENTS

Convention on Nuclear Safety – Preparatory Meeting (1997)

The international Convention on Nuclear Safety (CNS) entered into force on October 24 1996 and as of April 30, 1997, there are 65 signatories and 35 Contracting Parties * The CNS has an incentive character Safety is defined as a national responsibility The implementation of the CNS rests on national reports which are peer reviewed at Review Meetings of the Parties every three years

On April 21-24, 1997, a Preparatory Meeting of Contracting Parties was held in Vienna pursuant to Article 21 Three major documents regarding the review process, guidelines for national reports and rules of procedure and financial rules were adopted during this Meeting by the Contracting Parties They also developed consensus positions on languages, participation in country groups by non-group members, and financing of CNS Review Meetings They also agreed on a schedule of further implementation activities

Languages Opening and closing plenaries will be conducted in all six official United Nations languages country group sessions will be in English and the language (if one of the six official U N languages) of the country submitting its national report, and review meeting sessions will be in English Countries which feel they would not be able to follow country group proceedings in English or other national report languages will be able to request interpretation in another U N language

Country Group Participation The country group process (to prepare the Review Meetings) will begin with discussion by group members, followed by outside Contracting Parties seeking clarification of written questions or comments they have submitted at least two months in advance, and concluding with discussion of the group rapporteur's report by group members only Outside parties would be permitted to sit in on the full discussion of any report on which it submitted questions/comments as an observer

Financing Financing will come from the regular IAEA budget, except for special services requested by consensus, to be paid for through voluntary (unspecified) sources No separate schedule of assessments was adopted

Schedule. An Organisational Meeting will be held September 29, 1998, at which time National Reports will be submitted, and the First Review Meeting of Contracting Parties will be held April 12, 1999

* The list of Contracting Parties follows Since the last publication of the list of Contracting Parties in *Nuclear Law Bulletin* No 58 the following countries became Parties to the Convention Australia, Belgium, Brazil Chile Germany Latvia Netherlands (accepted) Slovenia and South Africa See INFCIRC/449/Add 2 of 4 April 1997

Convention on Nuclear Safety

List of signatures, ratification, acceptance, approval or accession

State	Date of Signature	Date of Deposit of Instrument	Entry into Force
Algeria	20 September 1994		
Argentina*	20 October 1994		
Armenia	22 September 1994		
Australia	20 September 1994	24 December 1996 (ratified)	24 March 1997
Austria	20 September 1994		
Bangladesh	21 September 1995	21 September 1995 (accepted)	24 October 1996
Belgium*	20 September 1994	13 January 1997 (ratified)	13 April 1997
Brazil*	20 September 1994	4 March 1997 (ratified)	2 June 1997
Bulgaria*	20 September 1994	8 November 1995 (ratified)	24 October 1996
Canada*	20 September 1994	12 December 1995 (ratified)	24 October 1996
Chile	20 September 1994	20 December 1996 (ratified)	20 March 1997
China*	20 September 1994	9 April 1996 (ratified)	24 October 1996
Croatia	10 April 1995	18 April 1996 (approved)	24 October 1996
Cuba	20 September 1994		
Czech Republic*	20 September 1994	18 September 1995 (approved)	24 October 1996
Denmark	20 September 1994		
Egypt	20 September 1994		
Finland*	20 September 1994	22 January 1996 (accepted)	24 October 1996
France*	20 September 1994	13 September 1995 (approved)	24 October 1996
Germany*	20 September and 5 October 1994	20 January 1997 (ratified)	20 April 1997
Ghana	6 July 1995		
Greece	1 November 1994		
Hungary*	20 September 1994	18 March 1996 (ratified)	24 October 1996
Iceland	21 September 1995		
India*	20 September 1994 (*)		
Indonesia	20 September 1994		
Ireland	20 September 1994	11 July 1996 (ratified)	24 October 1996
Israel	22 September 1994		
Italy	27 September 1994		
Japan*	20 September 1994	12 May 1995 (accepted)	24 October 1996
Jordan	6 December 1994		
Republic of Korea*	20 September 1994	19 September 1995 (ratified)	24 October 1996
Kazakstan	20 September 1996		
Latvia		25 October 1996 (acceded)	23 January 1997
Lebanon	7 March 1995	5 June 1996 (ratified)	24 October 1996
Lithuania*	22 March 1995	12 June 1996 (ratified)	24 October 1996
Luxembourg	20 September 1994		
Mali	22 May 1995	13 May 1996 (ratified)	24 October 1996
Mexico*	9 November 1994	26 July 1996 (ratified)	24 October 1996
Morocco	1 December 1994		
Monaco	16 September 1996		
Netherlands*	20 September 1994	15 October 1996 (accepted)	13 January 1997
Nicaragua	23 September 1994		
Nigeria	21 September 1994		

State	Date of Signature	Date of Deposit of Instrument	Entry into Force
Norway	21 September 1994	29 September 1994 (ratified)	24 October 1996
Pakistan*	20 September 1994		
Peru	22 September 1994		
Philippines	14 October 1994		
Poland	20 September 1994	14 June 1995 (ratified)	24 October 1996
Portugal	3 October 1994		
Romania	20 September 1994	1 June 1995 (ratified)	24 October 1996
Russian Federation*	20 September 1994	12 July 1996 (accepted)	24 October 1996
Slovak Republic*	20 September 1994	7 March 1995 (ratified)	24 October 1996
Slovenia*	20 September 1994	20 November 1996 (ratified)	18 February 1997
South Africa*	20 September 1994	24 December 1996	24 March 1997
Spain*	15 November 1994	4 July 1995 (ratified)	24 October 1996
Sudan	20 September 1994		
Sweden*	20 September 1994	11 September 1995 (ratified)	24 October 1996
Switzerland*	31 October 1995	12 September 1996 (ratified)	11 December 1996
Syria	23 September 1994		
Tunisia	20 September 1994		
Turkey	20 September 1994	8 March 1995 (ratified)	24 October 1996
Ukraine*	20 September 1994		
United Kingdom*	20 September 1994	17 January 1996 (ratified)	24 October 1996
United States*	20 September 1994		
Uruguay	28 February 1996		

* Indicates that the State has at least one nuclear installation which has achieved criticality in a reactor core
 (*) Indicates reservation/declaration was deposited upon signature



LIST OF CORRESPONDENTS TO THE NUCLEAR LAW BULLETIN

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BELGIUM	Mr P STALLAERT, General Director Technical Safety of Nuclear Installations Ministry of Employment and Labour
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BULGARIA	Mr A PETROV, Head, Department of External Relations, Committee on the Use of Atomic Energy for Peaceful Purposes
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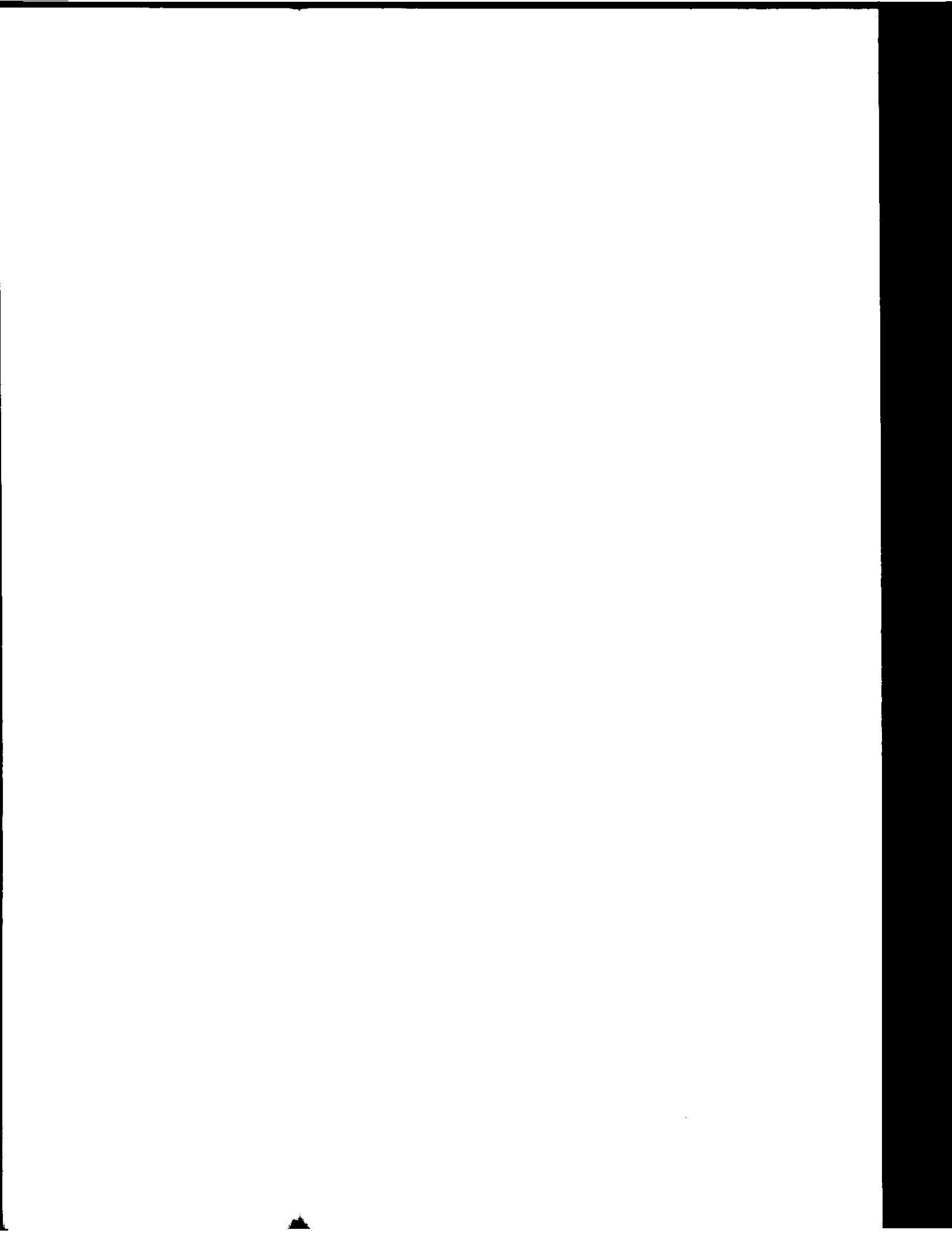
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Romania

*Law on the Safe Conduct of Nuclear Activities
(10 October 1996)*

June 1997



ROMANIA

LAW ON THE SAFE CONDUCT OF NUCLEAR ACTIVITIES*

(adopted by The Parliament of Romania on 10 October 1996)

CHAPTER I

General provisions

Article 1

The object of the present law is the safe conduct of nuclear activities for exclusively peaceful purposes so that they meet the nuclear safety conditions set for the protection of professionally exposed personnel, of the public, of the environment, and of property, with minimal risks, as provided by regulations and by observance of the obligations arising under agreements and conventions to which Romania is party.

Article 2

The provisions of the present law shall apply to the following activities and sources:

- a) research, designing, siting, production, construction, erection, commissioning, exploitation, modification, decommissioning, import and export of nuclear facilities and installations;
- b) mining and processing of uranium and thorium ores;
- c) production, supply, leasing, transfer, handling, holding, processing, treating, use, temporary or permanent storage, transport, import and export of nuclear and radioactive materials, nuclear fuel, radioactive waste, and ionizing radiations generating devices inclusive;
- d) supply and utilization of ionizing radiations dosimetric control apparatus, of materials and devices used for protection against ionizing radiations, as well as of packaging or of transport means specially arranged to this end;

* The unofficial text prepared by the Secretariat on the basis of the translation of the Law kindly provided by the Romanian authorities.

The Law No. 111/10 October 1996 – Law on the safe conduct of nuclear activities – was published in the “Monitorul Oficial” (Official Gazette of Romania), Part I, No. 267/29 October 1996.

- e) production, supply, leasing, transfer, holding, export, import of the materials, devices, and equipment provided for in Appendix 1 to the present law;
- f) holding, transfer, import and export of unpublished information relating to materials, devices and equipment relevant to for the proliferation of nuclear weapons or of other explosive nuclear devices;
- g) supply of products and services destined for nuclear facilities and installations.

Article 3

Terms used within the text of the present law are defined in Appendix 2.

Article 4

(1) The national authority competent in the nuclear domain exercising the regulation, authorization and control powers provided under the present law shall be the Ministry of Waters, Forests, and Protection of the Environment through the National Commission for the Control of Nuclear Activities.

(2) The National Commission for the Control of Nuclear Activities, further to be called the Commission, shall elaborate its own organizing and functioning regulations to be approved by Government Decision.

(3) The funding of the Commission's activity shall be provided from the State budget.

(4) Authorization fees for the activities provided under Article 2 shall be made revenue to the State budget.

(5) A quota from the receipts of the Commission from tariffs, representing the equivalent value of the expenses for technical expertise, examination and control undertaken in the authorization of the nuclear activities provided for under Article 2, shall be made revenue to the State budget; the balance from the tariff receipts may be used by the Commission for material expenses specific to these activities, to be entered in a separate account as extrabudgetary sources. The respective quotas shall be defined by a Government Decree.

Article 5

(1) The Commission is empowered to issue regulations for the specification in detail of the general requirements for nuclear safety, for protection against ionizing radiations, for quality assurance, for controlling the non-proliferation of nuclear weapons, for physical protection and emergency plans for intervention in case of nuclear accident, authorization and control procedures inclusive, as well as any other regulations needed for the authorization and control activity in the nuclear domain.

(2) The Commission may also issue regulations, in consultation with ministries and other interested agencies, according to their specific responsibilities.

(3) Powers of authorization and control, for which express provisions to empower other ministries and special bodies of the central public administration are specified under the present law, shall be excepted from the provisions of paragraph (1).

(4) By issued regulations and ordered measures within the framework of authorization and control procedures, the Commission shall ensure an adequate framework for natural or juristic persons to safely conduct activities subject to the provisions of the present law.

(5) The Commission shall revise the regulations whenever it is necessary for consistency with international standards and with ratified international conventions in the domain, and shall order the measures required for their application.

(6) The Commission shall revise the fees and tariffs Regulations for the authorization and control of nuclear activities whenever necessary, with the advice of the Ministry of Finance.

Article 6

Research, experimentation, development, manufacture, import, export, transit, holding, or detonation of a nuclear weapon or of any nuclear explosive device shall be prohibited on Romania's territory.

Article 7

The import of radioactive waste shall be prohibited, except in situations in which the import follows directly from the processing outside Romania's territory of a previously authorized export of radioactive waste, spent nuclear fuel inclusive, on the basis of the provisions of some international agreements or contracts concluded with commercial partners having been registered abroad, under the terms provided by the present law.

CHAPTER II

Authorization rules

Section 1

Authorizations and permits for the exercise of activities in the nuclear domain

Article 8

(1) The activities and sources provided for under Article 2 require an authorization issued by the Commission with observance of the authorizing procedure specific to each kind of activity or source, in accordance with the provisions of Article 5.

(2) Authorizations shall be issued only to juristic persons, at their request, if they can be shown to have observed the provisions under the present law.

(3) The authorization may be used only for the purpose for which it was issued, with observance of the limits and conditions stated in it.

(4) The authorizations provided for under paragraph (1) shall be applied for and, respectively, issued simultaneously or successively separately for each kind of activity, or for each facility having its own functionality, from the applicant's patrimony, or for each distinct type of radioactive material, of ionizing radiations generating device, of ionizing radiations dosimetric control apparatus, or of devices to measure the degree of the radioactive contamination, of material or devices used for protection against ionizing radiations, of packaging or transport means specially arranged to this end, which the applicant for the production authorization intends to achieve with a view to its use or marketing.

(5) The authorization for any facility during any construction or operating phase can be issued only if all the previous phases had been covered with the authorizations required.

(6) The authorization phases of the nuclear facilities and installations as provided for under paragraph (5) shall, as applicable, be the following:

- a) designing;
- b) siting;
- c) production;
- d) construction and erection;
- e) commissioning;
- f) testing operation;
- g) operation and maintenance;
- h) repair or modification;
- i) conservation;
- j) decommissioning.

(7) Partial authorizations may be issued to cover construction and operating phases.

(8) Partial authorizations issued simultaneously or successively for one and the same stage from among those provided for under paragraph (6) may have the character of a provisional decision of the Commission if the applicant so requests. In such a case their validity shall extend up to the issuing of the final authorization of that type, but for no more than two years with an extension right on request for two more years when all necessary information is not available in due time.

(9) The Commission shall withdraw the partial authorization whenever it shall find a lack of diligence on the part of the authorization holder for completion of the necessary information in support of the application for the issue of the authorization.

Article 9

(1) The holder of the authorization issued under Article 8 shall employ in authorized activities only personnel possessing a working permit valid for these activities.

(2) The working permit shall be issued on the basis of the regulations established according to the provisions under Article 5.

(3) The working permit shall be issued on the basis of an evaluation and examination by the competent national authority only to natural persons having responsibilities in the safe conduct of nuclear activities.

Article 10

(1) The authorization and the working permit shall be issued for a period determined by the regulations issued according to the provisions under Article 5.

(2) The right acquired on the basis of the authorization and the working permit shall not be transmitted without the issuer's consent.

(3) For the authorization or the working permit to be issued the applicant shall:

- a) pay to the Commission's account the technical expertise, examination and control tariff in keeping with the regulations provided for under Article 5 paragraph (6);
- b) pay to the State treasury the authorization fee in keeping with the regulations provided under Article 5 paragraph (6).

Article 11

Authorizations provided for under Article 8 shall be suspended or withdrawn totally or partially by the issuer at his own initiative or on being informed by other natural or juristic persons, in all cases in which the Commission finds that:

- a) the authorization holder failed to observe the provisions of the present law and the specific regulations, or the limits and conditions provided for in the authorization;
- b) the measures ordered by the supervisory authorities empowered under the present law are not fulfilled completely and at the set dates;
- c) there shall appear new situations from a technical point of view, or of another nature, unknown at the date when the authorization was issued, which may affect the safe conduct of nuclear activities;
- d) the authorization holder fails to fulfil his obligations with regard to the contribution to the fund for the management of radioactive waste and decommissioning, or to the insurance against civil risks for damages to third parties in case of nuclear accident;
- e) the authorization holder shall cease to be legally constituted;
- f) the authorization holder shall lose his legal capacity.

Article 12

The working permit provided for under Article 9 shall be suspended or withdrawn by the issuer at his own initiative or on being informed by other institutions with control powers according to the present law, or of specialist persons, in all cases in which the issuer finds that:

- a) the permit holder failed to observe the provisions mentioned in the regulations issued according to the provisions under Article 5;
- b) the permit holder died or lost his legal capacity.

Article 13

(1) The Commission may complete, revise, or modify on stated grounds the limits and conditions specified in working permits or authorizations.

(2) In case the new conditions imposed according to paragraph (1) are not observed, the provisions under Articles 11 or 12, respectively, shall apply.

Article 14

The extension of the validity period of an authorization or of a working permit, the re-authorization or granting of a new permit shall be made as stipulated under Articles 8, 9, and 13.

Article 15

(1) The withdrawal by way of exception of the authorization provided under Article 8 shall entitle the authorization holder to a compensation from the authority having ordered the withdrawal of the authorization. The amount of the compensation shall be determined by taking into account the public interest as well as that of the holder of the authorization withdrawn, as well as the grounds which led to the withdrawal of the authorization. The amount of the compensation shall be established by agreement of the parties or, in case of disagreement, by a court of justice.

(2) The authorization shall be withdrawn without compensation in the following situations;

- a) when the authorization holder obtained it by using spurious declarations;
- b) the authorization holder violated the provisions under the present law, the requirements of the authorizing and control bodies in the matter, or the limits and conditions provided in the authorization;

- c) the withdrawal of the authorization was ordered owing to the fact that the holder's personnel, third parties, the public, or the environment were exposed to risks above the regulation limits, generated by the authorized activity.

(3) The provisions under the present article shall also apply to the conditions specified under Article 13.

Article 16

(1) Activities and facilities in which small amounts of radioactive material and/or materials with a low radioactivity level are used, so that the risks related to the activity are not higher than the accepted threshold shall be excepted, partially or totally from the application of the authorizing rules provided under the present law, without thereby impairing the safe conduct of nuclear activities.

(2) The detailed limits and criteria of total or partial exception from the application of the authorization rules shall be established by the regulations issued in keeping with the provisions under Article 5.

Article 17

(1) For activities intended to be conducted, juristic persons may apply for a preliminary advice from the Commission, showing, on the ground of information presented by the applicant, that the excepted limits provided for under Article 16 will apply.

(2) In case the preliminary advice fails to confirm that the excepted limits will apply, the applicant shall be obliged to request the authorization of the respective activities, complying with the provisions under Article 8.

(3) The responsibility for the correctness of the information presented in support of the application for a preliminary advice shall be borne by the applicant.

Section 2

Authorization conditions

Article 18

(1) Authorizations provided for under Article 8 shall be issued only if the applicant for the authorization fulfils the following conditions, as applicable:

- a) can prove the professional qualification for each position, of his own personnel; that they know the requirements of the regulations with regard to nuclear safety and protection from ionizing radiations as well as the probity of the persons having decision making authority in

the management of the works during the construction and operation of the facilities or in the management of other nuclear activities from among those mentioned under that Article;

- b) can prove his organizing capacity and responsibility in the prevention and limitation of the consequences of emergencies with possible negative effects on the life and health of his own personnel and of the public, on the environment, on the property of third parties, and on his own assets;
- c) undertakes to ensure that the personnel responsible for the operation of the facility shall have the level of knowledge required for the position filled, with regard to the operation of the facility under conditions of nuclear safety, the associated risks, and the applicable nuclear safety measures;
- d) takes all the necessary measures under the prevailing technological and scientific rules for preventing damage that might result from the construction and operation of the facility;
- e) institutes an insurance or any other financial guarantee to cover his responsibility for nuclear damages, the amount, nature, and terms of the insurance or guarantee being in accordance with those provided under the law and the international conventions to which Romania is party;
- f) is answerable for taking the measures necessary for the prevention of interference of any kind, or for removing the disruptions from any third parties in the decision taking process, during the construction and operation of the nuclear facility;
- g) proposes a siting of the facility not conflicting with the legal provisions and prevailing public interests with regard to the non-contamination of the soil, air, or water, and does not affect the operation of other facilities situated in the vicinity;
- h) disposes of material and financial arrangements adequate and sufficient for the collection, transport, treatment, conditioning, and storage of radioactive waste generated from his own activity as well as for decommissioning the nuclear installation when it shall completely cease its authorized activity, and has paid his contribution for setting up the fund for the management of radioactive waste and decommissioning;
- i) institutes and maintains a system according to the specific protection regulations against ionizing radiations;
- j) institutes and maintains a system conforming to the specific regulations of physical protection of the nuclear fuel, radioactive and nuclear materials, radioactive waste and products as well as of the nuclear facilities including storage facilities for nuclear fuel, nuclear and radioactive materials, radioactive waste;
- k) institutes and maintains an authorized system for the quality assurance of its own activity, and makes sure that his suppliers of products and of services as well as their sub-suppliers institute and maintain their own controlled quality assurance system;
- l) institutes and maintains an approved preparatory system for the intervention in case of nuclear accident;

- m) institutes and maintains a system according to the application regulations of nuclear guarantees;
- n) holds all the other agreements, authorizations and advices required by law;
- o) institutes and maintains a public information system in keeping with legal regulations.

(2) The authorization terms provided for under paragraph (1) shall be detailed in the regulations issued according to the provisions under Article 5.

Article 19

(1) The holding of nuclear fuel without having authorization for its production, holding, storing, treatment, processing, use, or transport in relation to the activities conducted, issued in accordance with the provisions under Articles 18, 20, and 22, shall be prohibited.

(2) Unlawfully held nuclear fuel shall be confiscated, appropriated to the State's public property, and handed over to a custodian specially appointed to this end.

(3) The appointment of an authorization holder as custodian of the nuclear fuel shall be made by the issuer of the authorization by specifying in the authorization the obligation to accept the nuclear fuel in custody, in the name of the State.

(4) Obligations with regard to the preservation in custody shall also apply to spent nuclear fuel and other nuclear materials except radioactive waste.

(5) Nuclear fuel in custody or in authorized storage may be released only if:

- a) the holder is previously in possession of one of the authorizations referred to in paragraph (1);
- b) the nuclear fuel is to be entrusted to an authorized carrier for authorized transport to an authorized recipient.

(6) Custody expenses of the authorization holder shall be borne by the holder of the property documents for the nuclear fuel deposited in custody, on the basis of an understanding stipulated by contract or, in case of disagreement, by a judicial decision.

(7) Nuclear fuel unclaimed with due property documents shall become public property of the State since it is so determined.

Article 20

(1) The transport of nuclear fuel outside the precincts of the nuclear installations or outside the site in which the nuclear fuel is kept in custody shall be carried out only by carriers or transport agents authorized to this end in keeping with the provisions under Articles 8 and 18.

(2) The authorizations provided for under paragraph (1) shall be issued only if the following conditions are fulfilled, namely, that:

- a) the nuclear fuel shall be transported according to the national regulations with regard to the transport of radioactive materials issued in accordance with the provisions under Article 5, and according to the international provisions with regard to the transport of dangerous merchandise;
- b) the transport mode, time, and route shall not run counter to the public interest.

(3) The provisions of the present article shall also apply to spent nuclear fuel, radioactive products and waste and to other nuclear and radioactive materials.

Article 21

The utilization of transport means specially arranged for the transport of nuclear fuel, of nuclear materials, of radioactive products or of radioactive waste shall be permitted only when the authorized carrier is in possession of an authorization for the respective transport means granted by the Commission.

Article 22

(1) The import or export authorization provided under Article 8 shall be issued only under the following conditions, as applicable:

- a) the applicant of the authorization is capable of proving the competence and probity of the persons responsible for decision making in relation to the import or export operations which the granting of the authorization is solicited for, in keeping with regulations in force;
- b) the applicant of the import authorization pledges himself to ensure the observance of the provisions under the present law, of the regulations issued in conformity with Article 5, and with international commitments assumed by Romania in the nuclear energy domain, to deliver the products and information only to beneficiaries authorized to this end, in accordance with the provisions under Articles 8 and 18 and to report immediately to the Commission on the entry into the country of the products and information imported;
- c) the applicant of the export authorization obtains from his external partner the necessary guarantees from which it shall follow that the aforesaid partner will not use it for purposes that would be prejudicial to the international obligations assumed by Romania or to the national security. Likewise he shall have to prove that the export complies with the provisions under the present law and the specific regulations.

(2) The exporter shall be obliged to report immediately to the Commission on the exit from the country of the products and information exported.

(3) In the sense of the present law, any dispatch to Romania's territory shall be considered an import, and any dispatch from Romania's territory shall be considered an export.

Article 23

(1) The production, supply, or import of the items provided under Article 8 paragraph (4) shall require the obtaining as a prerequisite of a product, model, or type authorization granted by the Commission.

(2) The standard for radiation sources and means of measuring in the domain of ionizing radiations must use a model for which approval is granted by the Romanian Legal Metrology Bureau and should be metrologically checked in accordance with legal provisions.

(3) The designing, implementation, utilization, holding, and checking of means of measuring in the domain of ionizing radiations for army requirements shall be authorized by the Ministry of National Defence.

Article 24

(1) The quality assurance authorization of supply, designing, manufacture, construction-erection, repair and maintenance activities for products, services and systems classified as important for the safety of the nuclear facility shall be compulsory.

(2) The authorization shall be issued by the Commission in accordance with the provisions under Articles 8 and 18 and with the specific regulations referring to the suppliers of products and services from these categories as well as their sub-suppliers.

(3) The authorization provided under paragraphs (1) and (2) shall be issued only if the applicant for the authorization fulfils the following conditions, as applicable:

- a) is capable to prove the professional qualification by position of his own personnel; that they know the requirements of the regulations with regard to nuclear safety as well as the probity of the persons having decision making authority in the management of the activities which contribute to the supply of the products, services, and systems forming the object of the authorization;
- b) is responsible that the rest of his own personnel involved in the activities contributing to the supply of these products, services or systems shall have the necessary level of knowledge with regard to the effects of quality deviations of these products, services, or systems on the safety of nuclear facilities in which they are to be incorporated;
- c) is responsible for taking the measures necessary for the prevention of interference of any kind, or for removing the disruptions from any third parties in the decision making process and in the conduct of the authorized activities;
- d) institutes and maintains a system for quality assurance control in his own activity, and makes sure that his suppliers of products and services as well as their sub-suppliers institute and maintain their own system of quality assurance control.

(4) The authorization conditions provided for under paragraph (3) shall be detailed in the regulations issued in accordance with the provisions under Article 5.

CHAPTER III

Obligations of the authorization holder and of other natural or juristic persons

Article 25

(1) The holder of the authorization issued according to Article 8 shall have the obligation and responsibility to take all necessary measures in order to:

- a) ensure and maintain;
 - nuclear safety, protection against ionizing radiations, physical protection, his own emergency plans in case of nuclear accident, and quality assurance for activities conducted or sources associated with them,
 - a strict record of the nuclear and radioactive materials as well as of all sources used or produced in its own activity;
- b) the observance of the technical conditions and limits provided in the authorization and the reporting of any violation, in accordance with specific regulations;
- c) the limitation only to activities for which he was authorized;
- d) the development of his own system of requirements, regulations, and instructions ensuring the conduct of authorized activities without unacceptable risks of any kind.

(2) The responsibility for nuclear damages caused during or as a result of accidents that might occur by conduct of the activities provided in the authorization or of other activities resulting in the death, damage to the physical integrity or health of a person, destruction, degradation, or temporary impossibility of using some goods lies entirely with the holder of the authorization under the terms established by law and by international commitments to which Romania is party.

Article 26

For the conduct of a nuclear activity generating or having generated radioactive waste, the authorization holder shall compulsorily:

- a) be responsible for the management of radioactive waste generated by his own activity;
- b) bear the expenses related to the collection, handling, transport, treatment, conditioning and temporary or permanent storage of this waste;
- c) pay the legal contribution to the Fund for the management of radioactive waste and decommissioning.

Article 27

The holder of the authorization issued under Article 8 shall:

- a) develop a programme for the preparation of the decommissioning and submit it for approval to the Commission;
- b) produce the proof of having paid the legal contribution to the Fund for the management of radioactive waste and decommissioning.

Article 28

(1) Expiry of the authorization's validity, its suspension or withdrawal shall not exonerate the authorization holder or the one who has taken over the property title on the nuclear materials, facilities or installations, which were stated in the authorization, from the obligations provided under Articles 25-27 or those following from the conditions provided in the authorization.

(2) On discontinuation of the activity or decommissioning of nuclear facilities as well as on the partial or total transfer of the nuclear facilities or installations, of radioactive products or of ionizing radiations generating devices, the authorization holder shall have the obligation to apply for and to obtain first, under the terms provided by the present law, an authorization to hold, decommission or transfer them, as applicable.

Article 29

(1) Natural persons and juristic persons extracting or processing mineral substances associated in the deposit with uranium or thorium, or substances which in the technological processing flow are susceptible to contain radioactive materials shall have the obligation to take checking measures on the materials and equipment over the whole production, handling, transport, and storage cycle in order to find whether they show a concentration of radioactive substances or a radioactivity exceeding at a given moment the accepted limits included in the regulations provided under Article 16.

(2) If the exception limits are exceeded, the respective activities shall be subject to the authorization rules provided under the present law.

CHAPTER IV

Control rules

Article 30

The preventive, running and follow-up control of the observance of the provisions of the present law and of the regulations issued in accordance with Article 5 shall be carried out by the specially empowered representatives of the Commission, at the premises of the applicants for or holders of

authorizations. The control shall be carried out within the precincts in which these conduct the activities subject to authorization rules, in any other site which might be linked to these activities or at the premises of any other natural or juristic person that might conduct activities, hold facilities, materials, other sources or information provided for under Article 2 in any of the following situations:

- a) with a view to the issuing of the requested authorization;
- b) periodically or unannounced, in the validity period of the authorization;
- c) on the basis of notification from the authorization's holder;
- d) when facilities, materials, other sources or information might exist or activities might be conducted from among those provided under Article 2.

Article 31

(1) In exercising the control mandate, the Commission's representatives shall have the power to:

- a) gain access to any place in which activities subject to the control are conducted;
- b) carry out measurements and install the necessary oversight equipment;
- c) solicit the taking or receive samples from the materials or products directly or indirectly subject to the control;
- d) compel the controlled natural person or juristic person to ensure the fulfilment of the provisions mentioned under paragraphs a) to c) and to mediate the extension of the control to his supplier of products and of services or to their sub-suppliers;
- e) have access to all information, technical and contract stipulated data, in any form, required for carrying out the objectives of the control established under Article 30, with observance of confidentiality at the holders' request;
- f) request the authorization holder to transmit reports, information, and notifications in the form required by regulations;
- g) request the authorization holder to keep records, in the form required by regulations, of materials, of other sources and activities subject to the control and to control these records;
- h) receive the necessary protective outfit through the care of the applicant or of the authorization holder.

(2) To the extent to which it is so provided in international agreements to which Romania is party, the provisions under paragraph (1) shall also apply to persons approved by the Government of Romania carrying out in presence of representatives designated by the Commission the controls provided in those international agreements.

Article 32

(1) The representatives of the Commission shall have the obligation to observe the authorization conditions applicable as they are imposed upon the personnel of the authorization holder, over the whole duration of the control.

(2) After conclusion of the control, the representatives of the Commission shall have the following powers:

- a) to draw up a written statement of findings recording the results of the control, the corrective actions ordered, and the terms of their resolution;
- b) to propose the suspension or withdrawal of the authorization or exercising permit under the terms provided by law;
- c) to propose submission of the information to the legal prosecution bodies in the cases and for the deeds provided under the present law;
- d) to order the authorization holder to apply disciplinary sanctions to the guilty personnel under the terms provided by the present law;
- e) to apply contraventional sanctions provided under the present law for juristic or natural persons of the authorization holder through the persons which, according to his status, represent him in relation with public authorities;
- f) to apply the contraventional sanctions provided under the present law to the personnel guilty of committing these contraventions.

Article 33

Over the whole duration of the control, the juristic persons and the natural persons subject to the control shall have the obligation of taking the necessary measures in order to allow the provisions under Articles 31 and 32 to be carried out in good conditions.

Article 34

In case of insubordination to the control or of insubordination to any of its dispositions, the Commission may request the competent authorities either to proceed to forced execution, or to undertake an investigation. The Commission may request the intervention of the representatives of the General Police Inspectorate or, in emergency cases, it may undertake of its own motion safeguarding measures of nuclear safety, following upon which all related expenses are to be reimbursed by the holder of the authorization of his own accord or by distraint.

CHAPTER V

Other authorizations, advices, and responsibilities

Article 35

(1) The authorization or exercising permit issued on the basis of the provisions under the present law shall not exonerate the holder from observing the provisions of the legislation in force.

(2) The Commission shall establish the concrete modalities of application of the present law whenever its provisions may not be applied simultaneously with legal provisions of another kind, by consultation with the authorities of public administration in the matter, granting priority to the observance of the conditions of safe conduct of nuclear activities.

(3) The division of responsibilities between the commission and other specialist bodies of the central public administration shall be made with observance of the powers provided for them by law as well as of those specific to the authorities provided under the present law.

(4) In the exercise of their mandate, the bodies with the power to control nuclear activities as provided for under Appendix 3 shall have the rights provided under Article 31 paragraph (1), and the obligations and powers provided under Article 32, within the limits of the competences established by law.

Article 36

The rules of authorization and control of the pressure-retaining nuclear installations and facilities shall be established by specific technical prescriptions issued by the national authority for boilers and hoisting installations, with the Commission's advice, taking into consideration the general criteria for the safe conduct of nuclear activities.

Article 37

(1) The Central Authority for the Protection of the Environment shall, according to the law, organize the surveillance network of the quality of the environment so as to ensure the monitoring of the degree of radioactive contamination of the environment factors on the territory of Romania.

(2) The agreements and authorizations relating to the environment provided by law shall be issued by the Central Authority for the Protection of the Environment on the basis of the authorization and control criteria provided by law, completed with the specific authorization and control criteria included in the regulations issued by this authority in accordance with the provisions under Article 5, with consultation of the Commission and of the Ministry of Health, with reference to the monitoring and reporting of releases of radioactive effluents in the environment as well as of the radioactive contamination of the environment factors.

(3) The authorizations and agreements relating to the environment provided under paragraph (2) shall constitute a prerequisite condition for the authorization issued by the Commission in accordance with the provisions under Article 8.

(4) The Central Authority for the Protection of the Environment shall whenever necessary inform the Commission and the Ministry of National Defence on the findings in the monitoring activity exercised, and shall collaborate with them with a view to establishing the necessary measures.

Article 38

(1) The Ministry of Health shall authorize:

- a) the introduction into the social and economic spheres, for utilization or consumption purposes by the public, of products that were subject to irradiation or which contain radioactive materials;
- b) the utilization for medical treatment and diagnosis purposes of close or open sources, of ionizing radiations generating devices, and of pharmaceutical products containing radioactive materials.

(2) The authorization application shall be made by the natural or juristic persons conducting the activities provided under paragraph (1).

(3) The Ministry of Health shall develop its own authorization and control regulations to this end with observance of the provisions under Article 5 and with consultation of the Commission and of the interested ministries.

Article 39

(1) The Ministry of Health shall organize:

- a) the monitoring network of the contamination with radioactive materials of food products over the whole food chain, drinking water inclusive, as well as of other goods destined to be used by the public, according to the law; the monitoring of the radioactive contamination degree of these goods and products, whether home-made or imported, destined to be used on Romania's territory shall thus be ensured;
- b) the epidemiological surveillance system of the health condition of the personnel professionally exposed, and of the hygiene conditions in units in which nuclear activities are conducted. It shall likewise follow up the influence exercised by these activities on the health of the population, and issue the advices provided under the regulations in force.

(2) Whenever necessary, the Ministry of Health shall inform the Commission and other interested ministries of its findings in the monitoring activity, and collaborate with these in order to establish the joint actions called for.

(1) The co-ordination of the intervention preparedness in case of nuclear accident, with observance of the provisions under the present law, shall be ensured according to the law by the Central Commission for Nuclear Accident and Dropping of Space Objects, under the leadership of the Ministry of National Defence with the co-operation of all specialist bodies from the local and central public administration empowered in the matter.

(2) The on site intervention plan in case of nuclear accident for the nuclear facilities and installations shall be developed by the user, authorization holder together with all local and central public authorities and organizations involved in the preparation and in the conduct of the intervention in case of nuclear accident, in accordance with the requirements of the regulations issued according to the provisions under Article 5.

(3) The intervention plans in case of radiological emergencies caused by nuclear accidents in the facilities and installations found on the territory of other States which might, by transboundary effects, touch Romania's territory as well as off-site intervention plans (outside of the site of nuclear facility) on Romania's territory shall be developed under the care of the Civil Defence Command in the framework of the Ministry of National Defence.

(4) The local and central public authorities with powers in the domain of the preparedness and conduct of an intervention in case of nuclear accident shall develop their own plans correlated with the general intervention plan.

(5) The intervention plan provided under paragraph (2) shall be approved by the Commission; the provisions under paragraph (3) shall be approved by the Central Commission for Nuclear Accident and Dropping of Space Objects; and the provisions under paragraph (4) shall be approved by the leaders of the local and central public authorities with the advice of the Technical Secretariat of the Central Commission for Nuclear Accident and Dropping of Space Objects.

(6) The applicability of the intervention plan shall be periodically evaluated and controlled; that provided under paragraph (2), by the Commission; and that provided under paragraphs (3) and (4), by the Central Commission for Nuclear Accident and Dropping of Space Objects.

Article 41

Imports and exports of the products and information provided under Appendix 1 shall be approved by the Interministerial Council of the National Control Agency of Strategic Exports and of Interdiction of Chemical Weapons, and the import or export licence shall be issued by the Ministry of Trade as provided by Government Decision only after the applicant has obtained the import or export authorization provided under Article 22.

Article 42

The General Directorate of Customs from the Ministry of Finance shall control and admit the entry into the country or exit from the country, on the basis of the authorization issued by the Commission, of all goods for which the present law calls for an authorization.

CHAPTER VI

Sanctions

Article 43

Violation of the provisions under the present law shall entail material, disciplinary, administrative, criminal or civil responsibility, as applicable.

Article 44

(1) Carrying out an activity from among those provided under Article 2 and Article 38 paragraph (1) without having an adequate authorization provided by law shall be punished as follows:

- a) with imprisonment from six months to two years or a fine, the activities provided under Article 2 paragraph (a) regarding the research, designing, siting, production, construction or erection of nuclear facilities and installations, under Article 2 paragraphs (b), (d), and (g) as well as under Article 38 paragraph (1);
- b) with imprisonment from three years to ten years and interdiction of certain rights for the unauthorized carrying out of some activities provided under Article 2 paragraph (a) with regard to the commissioning, exploitation, modification, decommissioning, import, or export of nuclear facilities and under Article 2 paragraphs (c), (e), and (f).

(2) Attempt at the offences provided under sub-paragraph (1)(b) shall be punished.

Article 45

(1) The taking out of service, totally or partially, of control and surveillance equipment installed in the terms under Article 31 sub-paragraph (1)(b) and paragraph (2) without having reasons following from requirements of nuclear or radioprotection safety, if the deed is not a more serious offence shall be punished with imprisonment from 6 months to 3 years.

(2) If the deed provided under paragraph (1) is committed with culpability, the punishment shall be imprisonment from 3 months to one year, or a fine.

Article 46

(1) The decommissioning, manufacture, holding, import, export, transit, or detonation of nuclear weapons or of any other nuclear explosive devices shall be punished with imprisonment from 10 years to 25 years and interdiction of some rights.

(2) If the deeds provided under paragraph (1) resulted in the death of one or several persons, or in other particularly severe consequences, the punishment shall be of life imprisonment, or imprisonment from 15 to 25 years and interdictions of some rights.

(3) The attempt shall be punished.

Article 47

Unless committed under such conditions that, according to the law they be considered offences, the following deeds constitute infringements:

- a) non-observance of the reporting obligations provided under Article 25 sub-paragraph (1)(b) and Article 31 sub-paragraph (1)(f);
- b) non-observance of the limits and conditions provided in the authorizations issued in accordance with the provisions under Article 8;
- c) failure to carry out within the established term of the written orders given by the Commission, with acknowledged receipt, or of the control report of its representatives;
- d) the utilization of personnel in activities without risk of nuclear accident, lacking the necessary preparation for the activity carried out, or of unchecked personnel, or of personnel rejected at the periodical examinations;
- e) the utilization of personnel failing to prove the necessary knowledge and aptitudes, or failing to apply them in the activity conducted, with implications in the operation of the installation under conditions of nuclear safety, associated risks, applicable nuclear safety measures;
- f) violation of the regulations provided under Article 25 sub-paragraph (1)(a) by persons with decision-making power in the management of works, during the construction and operation of the nuclear installation;
- g) non-observance of the obligations provided under Article 25 sub-paragraph (1)(d) if unacceptable risks of any kind are generated thereby;
- h) the use by authorized persons of radioactive materials, of ionizing radiations generating devices, or of entrusted nuclear facilities for other purposes or for other operations than those established for the carrying out of the service tasks;
- i) the exercising of nuclear activities without an adequate exercising permit as provided under Article 9.

Article 48

(1) In the case of the infringements provided under Article 47 paragraphs (a) to (g), the fine will be a penalty for natural persons between Lei¹ one million and ten million, and for juristic persons, between Lei two million and twenty million. In the case of the infringements provided under Article 47 paragraphs (h) and (i), the fine shall be between Lei two hundred thousand and two million and shall be applied to the person guilty of their perpetration.

(2) The level of these fines shall be brought up to date by Government Decision in line with the inflation rate.

Article 49

The factual finding of infringements and application of penalties shall be made by empowered representatives of the Commission.

Article 50

The provisions under Law No. 32/1968 on the establishment and sanctioning of infringements, except the provisions under Articles 25, 26, and 27, shall be applicable to the infringements provided under the present law.

Article 51

The nuclear facilities and installations, their components, the nuclear fuel, radioactive products, radioactive waste inclusive, explosive nuclear devices or their components, which were subject to special seizure by judicial decision, in the terms provided under Article 118 of the Criminal Code, from the guilty party, shall be retained at the expense of the former owner in a safe place, under the seal of the public authority, with observance of the nuclear safety requirements so as not to impair the life or health of the population and not to cause environment or property deterioration, up to the ordering of legal measures in their respect.

CHAPTER VII

Final and transitory provisions

Article 52

Whenever necessary for reasons of State policy, the nuclear fuel and radioactive products may be requisitioned according to the law.

¹ The Lei is the national currency of Romania. The conversion rate on 15 May 1997 was 10,000 Lei = US\$1.

Article 53

Any natural or juristic person having suffered a prejudice as a result of abuses made by the Commission or another body provided under the present law may lodge a complaint within thirty days with the tribunal of administrative disputed claims.

Article 54

(1) Authorizations and permits issued before the coming into force of the present law shall maintain their validity up to the set term.

(2) The provisions under the present law shall also apply to authorization applications pending on the date of its coming into force.

(3) Any person who, at the date of the coming into force of the present law conducts activities for which the control and authorization rules provided under Chapters II, IV, and V of the present law apply, shall be compelled to apply for an authorization within six months after the coming into force of the law, if this was not necessary previously to the coming into force of the present law.

Article 55

(1) Within 90 days after the coming into force of the present law, the Government shall introduce for adoption the draft law on civil liability for nuclear damages and the draft law on the Fund for the management of radioactive waste and decommissioning.

(2) Until the adoption and coming into force of the law on civil liability for nuclear damages, the rules provided by international conventions to which Romania is party shall apply.

Article 56

(1) Within 180 days after the coming into force of the present law, the specialist bodies of the mentioned public administration shall issue the regulations provided by the present law.

(2) Until the coming into force of the regulations provided under paragraph (1) the provisions of existing rules shall apply.

(3) The regulations issued according to the present law shall be published in the "Monitorul Oficial" (Official Gazette of Romania).

Article 57

Appendices 1 – 3 shall form an integral part of the present law.

Article 58

The present law shall come into force within 60 days after its publication in the “Monitorul Oficial” (Official Gazette of Romania).

Article 59

Law No. 61/1974 with regard to the conduct of activities in the nuclear domain from Romania and Law No. 6/1982 with regard to the quality assurance of nuclear facilities and installations as well as any other provisions to the contrary shall be abrogated, except provisions referring to the promotion and conduct of the scientific research activity in the nuclear domain.

LIST
of materials, devices, equipment and information pertinent to the
proliferation of nuclear weapons or of other explosive nuclear devices
referred to under Article 2 paragraphs (d) and (f)

- a) non-nuclear materials, materials whose properties may be used for the production of energy of nuclear origin;
- b) devices or equipment specially conceived to be used in facilities from the nuclear fuel cycle or adequate to their use for that purpose;
- c) devices or equipment specially conceived to be used in the manufacture of nuclear materials or in the manufacture of those non-nuclear materials which are provided for under paragraph (a), as well as those devices and equipment adequate for their use to the same purposes;
- d) devices or equipment essential for the manufacture of the devices mentioned under paragraphs (b) and c).

The detailed list of the materials, devices, equipment and information pertinent to the proliferation of nuclear weapons and of other explosive nuclear devices provided for under the present appendix as well as the rules to control their export shall be established by Government Decision with observance of the provisions under the international treaties, conventions, and agreements to which Romania is party.

DEFINITIONS

which are referred to under Article 3 of the present Law

- a) **nuclear accident** – nuclear event affecting the installation or facility and causing the irradiation or contamination of the public or environment above the limits allowed by regulations in force;
- b) **nuclear activity** – any human practice introducing additional sources or ways of exposing, extending the exposure to a greater number of persons or modifying the possible sources or manner of exposure, starting from existing sources, thus increasing the exposure or probability of exposure of persons or number of persons exposed;
- c) **national authority competent in the nuclear domain** – authority established by law with legal competence to issue authorizations, to carry out controls, and to regulate the siting, designing, construction, commissioning, exploitation, or decommissioning of nuclear facilities and installations;
- d) **authorization** – document issued by the competent national authority in the nuclear domain on the basis of an evaluation of nuclear safety and control to a juristic person at its request for the conduct of a nuclear activity;
- e) **nuclear fuel cycle** – set of operations including the extraction and processing of ores and enriching of uranium and thorium, the manufacture of the nuclear fuel, exploitation of nuclear reactors, retreatment of the nuclear fuel, decommissioning, any management activity of radioactive waste, or any research and development activity associated with one or other of the above-mentioned operations;
- f) **nuclear fuel** – material or mechanical assembly containing fissionable materials or raw materials especially destined to be used in a nuclear reactor for the purpose of producing nuclear energy;
- g) **radioactive waste** – materials resulting from nuclear activities for which no use was provided and which contain radionuclides or are contaminated therewith in concentrations superior to the exception limits;
- h) **generating devices of ionizing radiations** – devices producing X-rays, neutrons, or charged particles;
- i) **irradiation facilities** – equipment including ionizing radiations generating devices or radiation sources capable of producing intensive radiation fields;
- j) **nuclear facility** – nuclear radiation generator, the facility apparatus, or device extracting, producing, processing, or containing radioactive materials; the nuclear facility shall also include the adequate structures or buildings;
- k) **nuclear installations** – works for the manufacture of nuclear fuel, nuclear reactors, critical and subcritical sets inclusive, research reactors, nuclear power stations, irradiated fuel storage facilities, enrichment units, or reprocessing installations;

- l) **nuclear raw material** – uranium or thorium or any of their combinations in any physical or chemical form; deposits containing at least 0.03 per cent by weight uranium, thorium or any of their combinations;
- m) **special fissionable material** – plutonium, uranium 233, uranium enriched with its isotope 233 or isotope 235; any material artificially enriched in any of the aforesaid isotopes;
- n) **radioactive material** – any material in any state of aggregation presenting the property of radioactivity, radioactive waste inclusive;
- o) **nuclear material** – other materials which, owing to specific nuclear properties, are of particular interest to the nuclear domain, and which are established by specific regulations;
- p) **mining** – prospecting, exploring, opening, ore processing and exploitation of nuclear raw materials;
- q) **emergency plan** – set of measures to be applied in case of nuclear accident;
- r) **radioactive product** – any radioactive material obtained in the production or utilization process of a nuclear fuel, or any material having become radioactive by exposure to radiations, except radioisotopes having reached the final preparation stage and are susceptible of being used for scientific, medical, special, social, commercial, or industrial purposes.
- s) **ionizing radiation** – any of the following radiations; alpha, beta, gamma, X-ray, neutrons, electrons, protons, or any charged particles (radio waves, visible radiations, infrared radiation, ultraviolet radiation as well as laser radiations, ultrasound, etc., not inclusive);
- t) **regulations** – technical rules, methodological rules, guide-books, instructions, procedures, or technical and organizing conditions regarding the authorization and control of nuclear activities, obligatory in the nuclear domain, issued by the competent authority in accordance with Article 5;
- u) **nuclear safety** – set of technical and organizing measures designed to ensure the safe operation of nuclear facilities, to prevent and to limit their deterioration and to ensure the protection of the personnel, of the population, environment and material goods against radioactive contamination or irradiation;
- v) **sources** – emitter or ionizing radiations and any radioactive material.

**CONTROL BODIES
of nuclear activities**

1. **State Inspectorate for Nuclear Protection within the framework of the National Commission for the Control of Nuclear Activities**
2. **Sanitary Police and Preventive Medicine Inspectorates of the Ministry of Health**
3. **State Inspectorate for the Protection of the Environment within the framework of the Ministry of Waters, Forests, and Protection of the Environment.**
4. **State Inspectorate for Boilers and Hoisting Installations from the Ministry of Industry.**
5. **Central Commission for nuclear accident and dropping of space objects from the Ministry of National Defence.**
6. **General Police Inspectorate and Fire brigade Command from the Ministry of the Interior.**
7. **State Inspectorate for labour protection from the Ministry of Labour and Social Protection.**
8. **National Agency for the Control of Strategic Exports and Interdiction of Chemical Weapons.**
9. **General Directorate of Customs from the Ministry of Finance.**
10. **Romanian Bureau of Legal Metrology.**