

NUCLEAR LAW BULLETIN No. 51

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- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability and thus to contribute to the development of the world economy,
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development, and
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This is achieved by

- *encouraging harmonization of national regulatory policies and practices with particular reference to the safety of nuclear installations, protection of man against ionising radiation and preservation of the environment, radioactive waste management, and nuclear third party liability and insurance*
- *assessing the contribution of nuclear power to the overall energy supply by keeping under review the technical and economic aspects of nuclear power growth and forecasting demand and supply for the different phases of the nuclear fuel cycle*
- *developing exchanges of scientific and technical information particularly through participation in common services*
- *setting up international research and development programmes and joint undertakings*

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

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FOREWORD

During the six months or so covered by this new issue of the Bulletin no major event has occurred in the context of nuclear legislation. Instead, we have seen a period of consolidation, during which the countries were completing their regulatory provisions and their network of co-operative agreements in the nuclear field, adjusting their institutional structures, in particular in the area of radioactive waste management.

An important event is to be noted, however, in the life of the OECD Nuclear Energy Agency. With the adhesion of the Republic of Korea, it now welcomes its twenty-fourth Member country.

Also, the "Articles" Chapter of Bulletin No. 51 contains a reflection on the development of the law applied to nuclear energy as well as an in-depth analysis of United States regulations on nuclear trade.

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Reflection on the Development of Nuclear Law*

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Abstract

A regulatory framework for nuclear technology was created early on at national and international levels. Essentially, it aimed at dealing with the high-risk component of a set of activities. Nuclear regulation, which often derogates from the common law, raises a number of questions pertaining to the relationship between the legal order and the technological order, particularly with respect to the compliance of the regulatory process with contemporary social values (environment and fundamental rights). Moreover, the major role played by scientific experts in elaborating and formulating norms applicable to the nuclear sector may affect the balance of power and the role of public bodies in the exercise of democracy. An analysis and comparison of various national situations through distinct legal practices lead to the conclusion that new patterns should be conceived to regulate the relationship among techno-industry, society and political situations in order to deal with concerns expressed about civilian nuclear activities.

INTRODUCTION

From very early on, the peaceful uses of the atom gave rise to the introduction of special regulations essentially designed to mitigate the effects of a technology which in many respects

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involves major risks for man and the environment in which he lives. In fact "the expression 'nuclear law' is the first in a series containing a double reference to an age-old discipline and a latter-day 'scientific revolution'" ¹

The problem is then posed of the relationship between the said scientific revolution and the law. But this in turn inevitably raises the question of how to define Law! We shall not, however, attempt to reply here to this last question since the changes which can be observed with regard to the development of legal rules - and which inevitably colour the concept of the Law - lie precisely at the heart of the problem of the relationship between a techno-science and the legal approach applied to it or required by it.

What we shall endeavour to do in this paper is to identify several lines of thought which are suggested by an observation and first analysis of the legal phenomena involved in nuclear technology and its regulatory framework. We shall, in particular, endeavour to compare nuclear regulations with the social or even axiological function of the Law inasmuch as certain legal provisions reflect the values of society.

1 NUCLEAR REGULATION AND THE LAW

The law was called upon at a very early stage to regulate nuclear technology, however, this reflected less the desire to impose regulations as the need of the experts to exorcise, at least in part, the numerous risks involved for society when scientific research is translated into everyday industrial activity ². This explains to some extent why nuclear regulations - which moreover involve economic and technical considerations which give them their original character, constitute exceptions to the common law.

A Nuclear technology and the legal order

The prospects offered by the peaceful uses of the atom, notably in the field of energy, suffered initial prejudice from the military associations resulting from the dropping of the bombs on Nagasaki and Hiroshima. This explains the pressing need to regulate nuclear installations and activities, indispensable for an acceptable development of this industrial sector considered promising by scientists and many politicians, but regarded with hostility and distrust by the public.

With this end in view, different regulatory arrangements offered by the legal order as a whole were to be used to give nuclear technology a normative framework capable of serving as a mediator with the rest of society.

New institutions were therefore created both within the international legal order and at national level³, they shared two characteristics: 1) they were staffed essentially by scientific experts from various disciplines (medicine, engineering, biology, chemistry, etc.) whose skills taken together would help achieve a better understanding of the reactions of atoms so as to

obtain as accurate a picture as possible of the phenomena involved and their effects on different sections of society, ii) these institutions were, to varying degrees, entrusted with the task of drafting regulations designed to help "tame" technology by means of the law, in particular, by establishing new, national and international legislation based on this kind of mixture of the technological imperatives involved and the economic needs and legal requirements of society

The result was that the legal function was taken over by a "world of expertise, verifications and rationalisation", much different⁴ from the law as a system of knowledge and logic. Thereafter, instead of using language to define situations, the law was obliged to adapt itself to other cognitive patterns in order to avoid being marginalised as a regulator of social relationships and behaviour⁵, a role it is called upon to perform

As problems and situations requiring solutions arose, nuclear technology was gradually incorporated into the legal order, giving rise to measures compatible with its development, i.e. achieving a balance between techno-industrial input and social requirements

In this respect, nuclear activities have, from the outset, given rise to three crucial questions: how can the peaceful uses of the atom be promoted while at the same time nuclear installations and materials are prevented from being illegally used for military purposes, how can workers and the public be protected against the harmful effects of radiation, how can the risk of accidents prejudicial to the public and the environment be minimised (nuclear third party liability system, improving safety, etc.) The answers to these questions were not to be exclusively technical, but nor would they be excessively legal; either, they were to be found in a combination of technology and the law mixed together in differing proportions depending on the specific question under consideration

The desire to prevent the proliferation of nuclear weapons provides an interesting example of the dynamic dialogue⁶ which began between the technological and legal fields in order to produce the normative framework required to achieve, insofar as possible, the objectives assigned to the system generated by such a dialogue and normally called the system of guarantees or safeguards. The constituent parts of this system are based on both law and technology: the cornerstone of the structure is the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) of 1 July 1968. This instrument essentially imposes two sets of obligations on States which are Parties to the Treaty or adhered to it: i) nuclear weapon States undertake not to transfer such weapons or other nuclear explosive devices or control thereover⁷, ii) non-nuclear-weapon States agree not to seek to acquire nuclear weapons or other nuclear explosive devices⁸, and accordingly undertake to accept International Atomic Energy Agency (IAEA) safeguards as negotiated and provided for in an agreement which each State will conclude with the Agency to allow the latter to verify the performance of the obligations thus undertaken⁹

The second stage of the non-proliferation system is the mechanism for control or application of the safeguards, depending on the approach determined by the IAEA and in accordance with any measures it deems useful to achieve this purpose. In this field of the development of a normative framework, nuclear technology will itself help the law to achieve

the objectives in its own regard. Thus, in order to allow the international Convention - i.e. the NPT - to achieve its objectives, the IAEA defined the technical means without which the terms of the Treaty would remain ineffective. Thus, a system of nuclear accounting was introduced within "material balance areas" (MBAs), using, amongst other things, statistical methods and the taking of samples to assess the flow of nuclear materials¹⁰, but above all accompanied by verifications carried out by IAEA officials in the nuclear installations of the States concerned.

Between the international Convention - the NPT - and the technical provisions of the safeguards system, is a tripartite agreement concluded between the IAEA, the State exporting and the State acquiring nuclear installations and materials. This agreement is in fact the link without which the NPT and the technical arrangements for the application of the safeguards would remain without effect, it enables the non-proliferation undertaking under the NPT to be put into practice, on the ground, and also provides the framework allowing the legal order to incorporate the technical norms through which the safeguards are supposed to become effective and the controls undertaken by the Agency experts. At the same time, the conformity or lack thereof with the legal rules on non-proliferation is recorded by means of the technological arrangements introduced for this purpose¹¹.

Radiation protection and nuclear safety, which are to some extent connected, also result from this type of continuing dialogue between technology and the legal order. The first involves the fixing of radioactivity doses and thresholds above which ionizing radiation is deemed harmful to the health of the staff working in nuclear installations and the public in general, within the nuclear normative framework, it represents "an important and complex discipline involving various sciences: physics, chemistry, biology, mathematics, medicine, law, etc."¹² As for nuclear safety, this term includes all the technical precautions taken to avoid the possibility of fissile reactions¹³, which could lead to an accidental release of radioactivity of an amount determined by the seriousness of the accident. Radiation protection and nuclear safety share common ground inasmuch as one of the functions of nuclear safety is to set up the technical arrangements required to keep releases and emissions of radiation below permissible levels¹⁴.

The body of legal rules governing the case both of radiation protection and that of nuclear safety was, in its first stage, the result of the scientific work and technical analyses preceding the drafting of the legislation and then of the subsequent dynamic dialogue through which norms are later improved to afford increased protection and safety, leading to successive amendments of the relevant regulations¹⁵.

In fact, the "compenetration"¹⁶ of technology and the law has given nuclear regulations two particular characteristics: their largely technical nature and the inclusion of economic factors as regulatory parameters.

B Nuclear law technical and economic aspects

While ongoing dialogue makes it easier for the legal order to adapt to technology by giving it its own norms, the scientific expertise on which the development of norms is based, on the other hand, undermines the autonomy of the law, at least when the latter "is faced with the requirements of the scientific and technical world"¹⁷ For although techno-industry turns to the law to solve some of the problems raised by its activities, it also endeavours to avoid rules being adopted which could hamper its development, it therefore formulates special functioning norms¹⁸ which it alone can determine since it, to the exclusion of the legal world, has the necessary knowledge Thus, the technical nature of this type of regulation often reduces the role of lawyers to "making mandatory the policies adopted by scientists"¹⁹

In the context of nuclear regulation, radiation protection provides a very good example of this state of affairs The levels of permissible radiation doses -- i e the thresholds above which radiation is considered harmful to the health of workers and the population -- are determined following studies and research work carried out by scientists from various disciplines working together, notably within the ICRP whose recommendations have, for more than 50 years, "been universally adopted both in national regulations and by the international organisations competent in the field of radiation protection"²⁰ The technicalness of the regulations resulting from such combined work reflects the fact that their provisions are based on scientific expertise²¹

Then again, as and when new information is acquired and expert knowledge processed, radiation protection norms will be revised and amended to improve the operating conditions of installations, reduce the exposure of workers and the public to ionizing radiation and therefore reduce the risk to public health In other words, permissible doses will periodically be reviewed downwards, and the regulations amended accordingly

Thus, the law becomes the reflection of the state of scientific knowledge, or even, in a sense, its social vehicle since in spite of the technical character of nuclear regulations, they nevertheless result from economic and political parameters also taken into account in determining norms²²

The cardinal principle in radiation protection is the result of an equalisation of this type For, the basic ICRP recommendation to which all regulations on this topic refer establishes a system of dose limitation with care being taken to ensure that all exposure to radiation or radioactivity in general is "kept As Low As Reasonably Achievable, economic and social factors being taken into account"²³, the so-called ALARA principle²⁴ Since the relevant economic and social factors vary from one country to another, and even from one type of installation to another - the costs differing in accordance with the technological system involved - uncertainties as to what will be deemed economically and socially reasonable are added to those regarding scientific knowledge²⁵

Technical norms thus no longer appear absolutely or strictly accurate - far from it - despite the scientific precision with which they are drafted, their reliability may be challenged since they result from a compromise²⁶ between scientists, industry, the public authorities and,

possibly, other economic or social groups. For, what trust can be placed in a regulation such as that fixing a maximum dose of exposure to ionizing radiation when it is known that such regulation is not only dependent on knowledge which requires further research and analysis but also that it is based on a judgment about the public good, the legitimacy of which may appear doubtful in the eyes of certain social movements, some of which go as far as to refuse to countenance the nuclear risk which they hold to be unacceptable²⁷

Moreover, the economic aspects of nuclear regulation have now and then been called into question in respect of regulations which are not specifically technical. Thus United States and Canadian laws on nuclear third party liability were to be challenged in the courts on the grounds that they derogated from the common law for economic reasons linked to the special characteristics of the nuclear industry and the nuclear risk. One of the special features of these liability regimes applicable in the nuclear sector is the introduction of a limit to the amount of financial cover which the operator - to whom liability is channelled, to the exclusion of all other persons - is obliged to take out with insurance companies²⁸. The reason for this is to avoid the excessive financial burdens which the unlimited common law liability would have entailed, and to overcome the refusal by insurance companies to cover nuclear risks, the scale of which, in the event of an accident, would be difficult to calculate, had no suitable solution been found, these concerns threatened to compromise the development of the nuclear industry²⁹

But the liability regimes adopted in order to meet the above-mentioned financial and industrial concerns did not constitute a legitimate basis in the opinion of some pressure groups who were to fight the law with the law or, if preferred, with rights. For the Price-Anderson Act, which regulates nuclear third party liability in the United States, was to be challenged in the courts by an environmentalist group which claimed that the legislation in question was unconstitutional, a claim based on the 5th Amendment. In 1978, the United States Supreme Court held that the Price-Anderson Act was a classic example of economic regulation and as such benefited from a presumption of constitutionality, it even used the special nature of the system of nuclear third party liability to justify the derogation from the common law³⁰

In Canada similar claims are at present being argued before the Ontario courts, the group Energy Probe is challenging the constitutionality of the Canadian legislation on nuclear third party liability on the grounds, amongst others, that limiting the amount of insurance cover is incompatible with the right of citizens to life, liberty and security as guaranteed by Article 7 of the Canadian Charter of Rights and Freedoms, and also contrary to the equality of rights provided for under Article 15 of the same Charter since it does not offer victims of a nuclear accident the protection generally afforded victims of damage under the common law on liability³¹

Even if, like their United States colleagues, the Canadian judges uphold the constitutionality of a nuclear third party liability system outside the scope of the common law this does not alter the fact that such contestation of special nuclear regulation shows that the technical and economic considerations on which they are based are no longer accepted as necessarily sufficient having regard to other values and functions of the law³². That is why

technical regulation appears contrary to legal regulation according to certain analyses which stress that

"its sole function of consensus and integration is to be found in the scientific legitimacy to which reference is always made. As if, epistemologically speaking, a social norm could be scientific by definition, such a norm is a provision based on the dominant beliefs of a society whereas the scientific approach, experimental by nature, only allows the fixing, on certain specific conditions, of a statistical average. It is true that science can often determine the threshold beyond which a risk becomes important () But science can never claim to define what is good or bad for the community. This is where the epistemological jump is made, from a factual judgment to a value judgment () by determining what is acceptable as a risk for the community, technical regulation usurps the function of legal regulation"³³

Such a finding of functional usurpation may seem excessive, it nevertheless has the merit of highlighting the problem faced by the law and the legal community, invaded by a type of knowledge and of references, the accuracy of which they are not able to verify³⁴. In fact, the ways in which nuclear regulations are drafted contribute towards this state of dichotomy between the technological and scientific world on the one hand, and the legal order on the other, in particular in its capacity as regulator of social relations

II THE NORMATIVE PROCESS AND DEMOCRACY

Generally speaking, the development of civilian nuclear activities in Western countries was accompanied by the creation of special regulatory institutions and bodies responsible for drafting the norms applicable to the nuclear industry and for exercising the necessary controls. In the context of a democratic system, viewed both from the administrative standpoint and in accordance with its scale of values, the importance acquired by regulations which for the most part escape parliamentary control - and which may even be beyond the understanding of the Government in its capacity as the political representation of the State responsible for implementing the policies chosen by society, and of the courts, whose task is to arbitrate between the rights and obligations of opposing parties having regard to the applicable rules - has raised doubts about whether the balance of democratic powers is being respected

A The bodies involved in nuclear regulation and the democratic system

To ensure that the regulation of nuclear technology was properly regulated, the assistance of scientific experts was required since they alone were capable of drafting the technical norms with which the operators of nuclear installations would have to comply. The work of this scientific staff was to be carried out within the government administration in various institutional forms whose procedures might or might not be in line with the notion of the balance of powers and of state bodies according to the scheme of democracy in a given country³⁵

In France, one of the main sources of regulation of the nuclear industry is the "Service Central de Sûreté des Installations Nucléaires" (Central Service for the Safety of Nuclear Installations - SCSIN)*, created by Decree³⁶ in 1973 and placed under the authority of the Ministry of Industry and Research, to the general directorate of which it is attached. Responsible for the study, definition and implementation of nuclear safety policy, the SCSIN in practice administers the licensing procedures for large nuclear installations (construction, operation, release of radioactive effluents) and ensures supervision, drafts general technical regulations and monitors their implementation, and examines the choice of sites for the construction of nuclear installations, ensuring that the public is informed about safety aspects³⁷

Since, in France, the production and distribution of electricity is a public service carried out by a single State corporation, "Électricité de France" (EDF), the creation of SCSIN is explained by the

"perceived need ()to make a clearer distinction between the role of the State as promoter of nuclear energy and the role of the public authorities acting as guardians of public safety and environmental protection, roles which are distinct but complementary rather than conflicting"³⁸

This may be so. However, the SCSIN forms part of the Ministerial structure, which means that its staff have to obey their hierarchical superiors. What is more, the Minister of Industry is also the supervisory authority for EDF, the main promoter of nuclear energy in France³⁹. This means that there may be no separation between regulatory and promotional functions, or only a tenuous one, in such circumstances, it is not impossible that the dynamic dialogue referred to above in fact made this blurring of functions worse since the nuclear techno-industry and its regulation in this all-important field of safety originate here from the same place rather than meeting on legally neutral ground which would enable the authorities better to carry out their regulatory duties having regard, in particular, to considerations of environmental protection and public health, considerations which may conflict with the economic constraints weighing on the determination of the technical norms.

As for the United States and Canada, they have each set up an autonomous administrative body situated entirely outside the traditional Ministerial structure⁴⁰. However, there are important differences in the functioning of the United States and Canadian bodies.

The Nuclear Regulatory Commission (NRC), set up under the Act reorganising the energy sector in the United States⁴¹, has very wide-ranging functions under different items of legislation⁴² and endeavours to protect the environment and ensure public health and safety, especially with regard to ionizing radiation. In order to perform its tasks, the NRC has three types of power: administrative, regulatory and "judicial" in the usual sense of the term to

* Editor's Note: now the Directorate for the Safety of Nuclear Installations - Direction de la sûreté des installations nucléaires - DSIN

describe, where appropriate, the exercise by North American regulatory bodies of their powers "in accordance with a quasi-judicial process", i.e. in accordance with an adversary procedure similar to that of a judicial body and involving public hearings and an adjudicative decisional process⁴³

The regulations are applied essentially by means of the licences for the construction and operation of nuclear installations. The procedure of a public hearing before a jury - the Atomic Safety Licensing Board - operates in such a way that the staff of the NRC in charge of processing the application for a licence and of producing the reports on safety and the environment, in fact find themselves at the end of the process full-heartedly supporting the application and defending the contents of the documents - task normally left to the promoter - in front of the jury which is going to decide⁴⁴. Such a situation is all the more surprising in that in the United States, the operators of installations are usually private enterprises. The reasons put forward to justify the involvement of NRC staff in this strange way are the complex nature of the technical problems concerned, the high costs involved in examining them and the very important effect that questions of safety, energy and finance have on the final decision, it is, moreover, stressed that

*"juries are obliged by law to base their decision solely on the documents and written and oral evidence submitted to them by the parties () Consequently, if the staff wishes its technical expertise (and the evidence accompanying it) to be included in the file, it must be a party to the proceedings"*⁴⁵

In sum, there exists here a similar blurring of functions, in a different context, but which cannot fail to raise doubts about whether such a regulatory process meets the requirements of a democratic system as regards the independence of the regulatory bodies or public authorities vis-à-vis the subjects they are responsible for regulating.

Turning lastly to the Canadian Atomic Energy Control Board (AECB), also possessing wide regulatory powers and responsible for controlling and supervising civilian nuclear activities⁴⁶, it differs from its United States counterpart, and from other large Canadian regulatory bodies, in that its powers regarding the granting of construction and operating licences for nuclear installations are not subject to any judicial-type process⁴⁷ such that its licensing decisions are considered by the Federal Court of Appeal⁴⁸ as being administrative in nature and therefore not open to challenge or judicial control⁴⁹. In particular, in a case concerning the refusal by the AECB to grant an export licence for uranium oxide on the basis of a Directive to this effect of the Minister of Energy, Mines and Resources addressed to the Board in pursuance of the Atomic Energy Control Regulations⁵⁰, the Federal Court held that under the terms of the Atomic Energy Control Act, the AECB acts under the supervision of a Minister and that its decisions regarding atomic energy are based on Government policy or Canada's international obligations and, accordingly, their existence or nature cannot be a subject of dispute between the applicant and the statutory authorities in any way as to authorise judicial or quasi-judicial proceedings⁵¹, this means also that any third parties with an interest cannot express their point of view since the absence of any adversarial procedure eliminates practically all debate.

This brief review of three different institutional arrangements shows clearly the difficulties which can be encountered in evaluating properly the normative process in accordance with which nuclear technology is regulated and governed within democratic systems. It is all the more difficult to assert that the bodies and procedures set up possess proper democratic credentials in that account must also be taken of the consequences attaching to the technical characteristics of nuclear regulation which, like other technical norms, is drafted by experts and may appear "to be a pure instrument of power in the hands of those who know how to interpret it"⁵². Thus, both the public and the courts are going to find themselves at a loss, given their lack of scientific knowledge and technical resources and will have to trust the experts to verify standards and monitor compliance⁵³. Here again we have the harmful effects of a blurring of roles.

B Nuclear regulation and social values

The nuclear industry has always met with the hostility of certain sections of society in Western countries. Ecologist groups, in particular, carefully examine all possible avenues offered to them under the legal order of a democratic system to challenge technology which they consider to involve serious dangers and major risks for public health and the environment. The cases brought before United States, Canadian and French courts by environmentalist associations, already referred to above, are examples of this. The French Association "Les Amis de la Terre" even tried to introduce itself into the regulatory hierarchy in order to challenge the validity of regulations relating to the discharge of liquid radioactive effluents and that through the prism of patent error⁵⁴.

In this case brought before the Conseil d'Etat, the Association challenged the legality of two inter-Ministerial Orders (of 1976) regulating the discharge of liquid radioactive effluents from nuclear installations and promulgated in pursuance of a Decree of 1974 - a Section of which repealed certain provisions of a 1964 Act concerning the water system and measures to control water pollution. The effect of this repeal was to remove the discharge of liquid radioactive effluents from the general provisions of the said Act

"prohibiting the discharge or immersion in the sea of materials of all kinds, in particular industrial and atomic waste, capable of prejudicing public health"

It is on the basis of this initial repeal that the 1974 Decree proceeds to lay down the general rules to be applied to discharges from nuclear installations, rules which serve as the legal basis for the disputed Orders⁵⁵.

Although the court acknowledged that the repeal of statutory provisions by Decree was illegal, it nevertheless did not hold that the two Orders promulgated in pursuance of such an illegal Decree were invalid since it recognised the lawfulness of the administrative jurisdiction over the conditions for discharging radioactive waste⁵⁶.

When the courts compartmentalise the legal order in this way in a democratic system and find means - even if specious - of getting around the constraints of the hierarchy of

legislation, despite its being the guarantor of institutional legality, it is hard not to conclude that "democracy has been defeated"⁵⁷, especially when affecting views which are increasingly considered by the public to be values of society. This carries with it the risk of discrediting the judicial function together with that of the law.

Much has already been written about the threat which nuclear technology poses to democracy and its axiological representations⁵⁸. The question of the extent to which a normative system derogating from the common law may prejudice the democratic system merits in-depth analysis and study, the fact of constituting an exception to the ordinary law is not necessarily to blame for this given that the technical nature of nuclear regulation in a sense dispossesses the law in that it interferes with its role of "privileged vector for the dominant beliefs of a society"⁵⁹. Instead of by "power and lost legitimacy", the Executive captures the normative space through scientific expert bodies of the type we have apprehended, and that "to the advantage of a techno-state which directs society's choices and major technological projects"⁶⁰.

One problem remains outstanding in this trend that of liability in a technological civilisation. For, while special legal solutions have been adopted for questions of third party liability, with arrangements for compensating victims in the event of an accident, it is nevertheless true that the concept of "prejudice" remains patrimonial, i.e. that liability resulting from a nuclear accident will be involved when persons prove that they have suffered injury to their health and/or damage to their property. The concept of environmental damage does not yet exist, nor does that of damage to future generations.

However, in the present state of scientific knowledge, the consequences of a catastrophe such as that at Chernobyl remain uncertain, while modern instruments were able immediately to measure atmospheric radioactivity levels in other countries, whether near or far, we are a long way from knowing the longer-term consequences of the radioactive fall-out involved. Besides which, the means of action and evaluation in this sort of situation remain insufficient despite the 45 years of experience enjoyed by the nuclear industry.⁶¹

In these circumstances, and given the many complex and critical aspects of nuclear technology, such as the disposal of medium and long-lived radioactive waste⁶² it is likely that this sector will develop either apart from or in contradiction with the principles on which democratic societies are based. Certain expert reports even went so far as to point out that the ignorance of the public was the best way of ensuring a future for the civilian uses of the atom!⁶³

However that may be, irreversible situations have been created and the problems arising therefrom have to be dealt with. Can the law serve as an instrument in this respect? Do lawyers have a role to play? One thing is certain, to paraphrase another expression: technology is too important to be left to technocrats and scientists alone.

Following the inquiry into the Three Mile Island accident, the question was posed whether democratic procedures established two centuries previously were still relevant to our era of complex technologies and large-scale dangers. "The current arrangements for delegating

power are out of date Doubts arise as to the ability of elected persons to be real representatives since they, like us, appear as non-experts excluded by the Executive () Doubts arise also as to the experts, perceived yesterday as neutral but today as resolutely supporting powerful interest groups, using their expertise as a suspect cloak of legitimacy Here again the traditional mediation procedures have broken down"⁶⁴

It is in the context of these undeniable developments that lawyers must now ponder the social function of the law and their own role in society Litigation procedures, as the focal practice of the law, seem hopelessly inadequate to deal with the problems posed New models for regulating relations between techno-industry, society and its political representatives must be devised to meet properly, or at least as well as possible the concerns referred to in this brief review of nuclear regulation

We must not wait until another accident happens

Notes and References

- 1 P Strohl, "L'originalité du droit nucléaire" (April 1990) 75 Le Courrier du CNRS Les Sciences du Droit (France) at page 42 The author adds "In fact, nuclear law does not really exist as an autonomous set of legal rules, the term is used rather as a convenient way of designating several new provisions in various branches of law, which have the same purpose - the rules applying to the uses of nuclear energy inasmuch as they derogate from the common law - and which together form a coherent whole" We would not altogether agree with this opinion while it is true that the legal rules concerned are dictated to a large extent by technological requirements, the special features themselves of any given technology - and in particular nuclear technology - at the same time require a parallel set of autonomous legal rules (and more widely, regulations) in that they require many derogations from the ordinary law since different branches of the law are affected
- 2 In the preface to the publication by E Jacchia, *Atome et sécurité*, Paris, Dalloz, 1964, a former Minister and President of the Euratom Commission at the time, Mr Pierre Chatenet, writes "In today's nuclear research centres and installations, practical precautions and strict discipline can achieve close to 100 per cent safety It is, however, possible that the development of nuclear energy on a large scale could, if no precautions are taken, become dangerous the increase in the number of installations together with considerations of cost - for protection measures are expensive - could lead to the taking of risks A body of law regulating nuclear installations must therefore be prepared many measures have already been taken in this respect, as explained by Mr Jacchia *"This book is reassuring and the reader will, having regard to the number of regulations referred to therein, feel that all precautions have already been taken to ensure that nuclear energy causes no damage"* (Italics added)

In parallel with the creation of new international and national bodies, various institutions already in existence or set up in another context than that relating directly to the use of the atom, developed their own special services to work in the nuclear sector, each in the particular field of competence of their parent institution. By way of example, at international level, alongside the International Atomic Energy Agency (IAEA), set up in 1956 under the auspices of the United Nations, the International Labour Organisation (ILO), the World Health Organisation (WHO) and the Food and Agriculture Organisation (FAO) - to name only these - instructed their relevant services and teams to undertake ongoing studies on civil nuclear activities and to make the observations or recommendations required from the viewpoint of the Organisation. See E Jacchia, *supra*, note 2 at pages 63-97

D Bourcier, *Ordre juridique et ordre technologique*, Cahiers S T S , Paris, Editions du CNRS, 1986, page 6

Without going so far as to accept Kelsen's views, according to which the legal nature of a norm is defined by the sanction accompanying it, as representing the whole and exclusive truth, it is interesting to note that Kelsen, speaking of the purpose of the law, wrote "Viewed from the standpoint of its purpose, the law appears as a specific method designed to make men behave in a given manner", Hans Kelsen, *Théorie pure du Droit*, 2nd edition, Neuchâtel, Editions de la Baconnière, 1988 at page 72

This term ("dynamique dialogique" in the original French) is at this stage given its simple original meaning referring to dialogue, the way Gérard Timsit refers to the concept of "dialogism" certainly would have been interesting had we been trying to describe the normative system to which nuclear technology gives rise, an approach which seems to us premature in the context of this initial examination of legal phenomena as they relate to technology. However, the definition given by G Timsit of dialogism may be noted "the term is used to denote the fact that all communication takes 'the form of an exchange of statements, in the context of a dialogue' () Transposed to the field of legal science, the concept of dialogism indicates that norms are generated not from a single source only - the State or society - nor are they born of a single logic. In a system of dialogic law there does not exist - as has already been said - any single, unitary logic" G Timsit, *Thèmes et systèmes de droit*, Paris, P U F , 1986 at page 153. The diversity of the origins of norms, the heterogeneity of the sources shaping the normative order in which the addressees involved or concerned by nuclear technology are to operate, of course demonstrates that such normativity does not owe its origins to a single source and could be an example of legal dialogism, to corroborate such a conclusion, however we believe that the process has to be further analysed, identifying in greater detail that which belongs to the legal order and distinguish that belonging to the technological order before being able to identify the definitive norm arising from the twin sources of technology and the law, like that of the sender and receiver of the message whose dialogue according to Timsit - with the style of reading, methods of interpretation and arrangements for application which it involves - determines at the end of the day the final configuration of the norm (see G Timsit, "Sur l'engendrement du droit" [1988] R D P 391 at page 58

Treaty on the Non-Proliferation of Nuclear Weapons, 15 March 1975, IAEA document, INFCIRC/153 [hereinafter NPT], the text is reproduced in C A Colliard and A Manin, *Droit international et histoire diplomatique*, v 1, Paris, Montchrestien, 1971 at pages 386-90

ibid , Article II of the NPT

- 9 Ibid , Article III of the NPT
- 10 It is not possible here to go into the technical details of the arrangements on which the IAEA safeguards system is based Reference should be made in this respect to the publication by S Courteix, *Exportations nucléaires et non-prolifération*, Paris, Economica, 1978, in particular to pages 33-37 and the document reproduced in the Annex, pages 161-88, entitled "Structure et contenu des accords à conclure entre l'Agence et les États dans le cadre du Traité sur la non-prolifération des armes nucléaires" (NPT)
- 11 The NPT was not in fact sufficient in itself to prevent proliferation since many States did not sign the Treaty Thus, those countries possessing nuclear technology and with the ability to export it agreed amongst themselves, in 1975, on a code of conduct - known as the "London Agreements" or "London Club Agreements" - laying down stricter conditions for the export of nuclear technology and, above all for the safeguards and controls to which importing States are obliged to submit See S Courteix, *supra*, note 10 at pages 45-66 The London Agreements do not fundamentally change the basis of our analysis inasmuch as certain States, such as France, though not Signatories of the NPT are members of the London Club, or other non Signatory States acquiring nuclear technology are obliged by the members of the London Club to submit to verification rules similar to those under the NPT - though stricter The dynamic dialogue continues to operate in the same way except that one of its components is the London Agreements instead of the NPT We do not feel that France's announcement of its adhesion to the NPT in 1991 will change anything in this respect
- 12 P Bonet-Maury, *La Radioprotection*, Paris, P U F, 1969 at page 12 The author describes what he calls "Radiation protection technology" (page 10), its development, the development of the measuring instruments essential to detect radioactivity, and the distilling of scientific knowledge which was to make it possible to determine the "dose limits below which radiation may be considered as tolerable" (page 62), given that radiation protection was developed in nuclear power plants, the author goes as far as to consider that it "constitutes an important technological branch" of the nuclear industry (page 12), which well illustrates the constant two way flow between the drafting of regulations governing nuclear activities and the technology itself which becomes both a regulatory object and tool For, inasmuch as technology will develop the technological means to improve the quality of radiation protection measures and experience will permit the radiation exposure of workers to be reduced to a minimum by modifying activities involving high doses of radioactivity and by the consequent 'splitting-up' of the dose in question among the number of persons required to reduce individual exposure, normative bodies such as the ICRP in particular, will have available more relevant data and set better standards or even "force" technology to make an extra effort to improve radiation protection
- 13 J Hébert, *Nuclear Law Course* Paris, 1977 [unpublished]
- 14 Ibid
- 15 Here again the normative process involves various agencies and levels of intervention which while varying from one country to another, do nevertheless share some common features thus after defining safety principles and methods during the 1960s (see for the history of nuclear safety F Cogné, "Evolution de la sûreté nucléaire" (1984) 1 R G N 18) regulations were implemented in different countries by means of bodies created or designated for the purpose in each country the Nuclear Regulatory Commission (NRC) in the United States the Atomic Energy

Control Board (AECB) in Canada, the Service Central de Sûreté des Installations Nucléaires (SCSIN) in France, etc In all cases, it was through the process of granting construction and operating licences for nuclear installations that safety requirements were given the form of definitive standards governing the activities of licence holders, from both a technical and legal standpoint As regards radiation protection, standards are based on the recommendations of the International Commission on Radiological Protection (ICRP) - a non-governmental body staffed by experts from various scientific disciplines, these recommendations are subsequently transmitted either by the International Atomic Energy Agency which publishes "Basic Standards for Radiation Protection" and "Codes of Practice", applicable mandatorily to operations conducted under the control of the Agency and serving as models for the Member States, or by the competent national bodies responsible for drafting their country's radiation protection regulations (see J Hébert, "Sources et structures du droit de la radioprotection" in *L'accident nucléaire, La Documentation française*, No 552-553, January-February 1987 at pages 22-24) In the context of revisions undertaken in the light of following this type of distilled experience, notably after the Chernobyl accident, the ICRP has reviewed its recommendations regarding radiation protection standards by improving the fundamental principles on which the protection system is based See ICRP Publication 60, 1990 Recommendations of the International Commission on Radiological Protection, in *Annals of the ICRP*, 1991, 21 1-3, Pergamon Press, New York, 1991

- 16 This term is used by the international relations sociologist, M Merle, to describe the difficulty of making a distinction between internal and external political activities, in an article entitled "Politique intérieure et politique extérieure" in *Forces et enjeux dans les relations internationales, Economica*, Paris, 1981 at page 163
- 17 M -A Hermitte, "L'autonomie du droit par rapport à l'ordre technologique" in *Ordre juridique et ordre technologique, Cahiers S T S*, op cit, p 96
- 18 Ibid, p 97
- 19 Ibid, p 96
- 20 Ha Vinh Phuong, "Fondements internationaux de la réglementation en radioprotection, cours international de radiologie" (extracts) in *L'Accident nucléaire, Documentation française, supra*, note 15 on page 20
- 21 An example of this is Directive No 80/836 Euratom, issued by the Council of the European Communities on 15 July 1980 and which amends previous Directives "laying down the basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation" Article 1 of this Directive, dealing with definitions, includes no less than 17 equations - which it would be difficult to reproduce here - relating to concepts from biology, radiology, medicine and physics, such as activity, absorbed dose, and particle fluence, as well as units of measurement such as the becquerel, the curie and the rad It goes without saying that, unless they happen to have received scientific training in these fields, lawyers are unable to decode such provisions Since, in European Community law, Directives bind Member States as to the results to be attained, leaving to the competent national authorities the choice of the means and form to be used for this purpose, the French Government - to take only one example - incorporated the provisions laid down by the said European Directive (as amended on 3 September 1984) into its national legal system by means of Decree No 86-1103 of 2 October 1986, an Annex to this Decree includes all the definitions referred to above and itself

adds a series of scientific references which thus circumscribe the law. Lawyers will find it easier to understand the classification categories of workers and the public according to the type of exposure whose limits are scientifically detailed and thus remain the apauage of a world of learning very different from the law

- 22 S Charbonneau, "Norme juridique et norme technique" in Archives de Philosophie du Droit v 28, Paris, Sirey at page 286
- 23 International Commission on Radiological Protection, Publication 26, 17 January 1977, Fontanay aux Roses, France
- 24 As Low As Reasonably Achievable
- 25 It is only with the passage of time that it has been possible to analyse the effects of the radioactive fallout of the Hiroshima and Nagasaki bombs, nuclear tests in the atmosphere, etc, and understand the mechanisms involved so as to identify the conditions of harmfulness or lack thereof. In spite of all the data available, the subject is far from being exhausted and the ICRP has said that the relationship between the dose received by an individual and a given biological effect caused by radiation is a complex subject requiring much further study. Thus for the purposes of protection against radiation, it is necessary to make certain simplifying assumptions (See ICRP, Publication 26, supra, note 23). The information gathered so far following the accident at Chernobyl does not yet seem sufficient nor has it benefited from the required passage of time - notably to determine the stochastic and genetic consequences - to justify any modification or adjustment of analyses of the effects of radioactivity. It goes without saying that international experts are studying these issues from the new post-Chernobyl standpoint: the studies conducted by the IAEA and under its auspices are only just beginning to provide the necessary information.
- 26 S Charbonneau, supra note 22 at page 286
- 27 See in this respect, the viewpoint of Greenpeace International "The lessons of Chernobyl" in Briefing Paper on the IAEA and Reactor Safety, 11 September 1986, pp 9-11, translated from the English by la Documentation française, L'accident nucléaire, supra note 15 at pages 17 to 18.
- 28 On the system of the channelling of liability, see J Hébert, "Nucléaire responsabilité civile art 1382 à 1386, Code Civil", Juris-Classeur Dalloz fasc 425-1, May 1986. The author compares in particular the so-called economic channelling system set up under the United States Price-Anderson Act of 1957 [Pub L 85-256, para 4, 71 Stat 576 (1957)], with the system of legal channelling introduced by the Paris (1960) and Vienna (1963) Conventions on third party liability in the field of nuclear energy, which served as a model for the Canadian Act on Nuclear Third Party Liability (1970).
- 29 For a full understanding of the economic logic underpinning the system of nuclear third party liability see the Exposé des Motifs accompanying the Convention on Third Party Liability in the Field of Nuclear Energy, 29 July 1960, text published by the Nuclear Energy Agency of the OECD 1974 edition, and 1982 revised version, 1989 edition.
- 30 Duke Power Company v Carolina Environmental Group Inc 438 U S 59 (1978) 26 June 1978

- 31 Energy Probe et al v Attorney General of Canada, (1989) 3 C E L R (Ont C A) (N S) 262 The two constitutional provisions in question are "Article 7 Everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice Article 15(1) Every individual is equal before and under the law and has the right to the equal protection and equal benefit of the law without discrimination ()"
- 32 The French courts have also upheld the validity of regulations concerning releases of liquid radioactive effluents, whose provisions were challenged as illegal by an environmentalist association We shall consider this judgment again below, but can quote here the passage which is relevant at this stage " The Association 'Les amis de la Terre' has not established that by enacting, as they did by the provisions of the Decree of 31 December 1974 and those of the Orders of 10 August 1976, the general and technical conditions on which the releases in question could, after public inquiry, be authorised, the authors of these texts committed a patent error of appreciation with regard to the provisions reproduced above of Section 2 of the Act of 16 December 1964 which requires such releases to be harmless and not dangerous to public health, marine fauna and flora or the economic and touristic development of the coastal regions" Conseil d'Etat, 10 February 1984, Association "Les Amis de la Terre" (Req Nos 5034 and 5035) (1984) 1 Revue juridique de l'environnement at pp 208-10
- 33 Author's italics, S Charbonneau, supra, note 22 at pp 189-290
- 34 Ibid , at pages 288-289
- 35 We shall restrict ourselves to an examination of the established structures in 1) France, a country with a unitary system and a two-Chamber Parliament but whose 1958 Constitution enlarged the field of secondary legislation to the detriment of that of statutory law, in other words limited the scope of action of the legislature in favour of that of the executive (Articles 34 and 37 of the French Constitution of 1958), 2) the United States and Canada, both countries with a federal structure sharing a tradition of sectoral regulatory bodies with accompanying judicial controls Nor will we enter into details of the mechanisms set up in different places, referring interested readers to the quasi-exhaustive comparative study conducted by Denis Bourque, L'énergie nucléaire et le droit les autorisations, l'environnement, les contrôles judiciaires et politiques, Yvon Blais Inc , Cowansville, 1990
- 37 Denis Bourque, supra, note 35 at pages 100-01
- 38 1983 Activity Report of the SCSIN, quoted by Denis Bourque, supra, note 35 at page 100
- 39 Denis Bourque, ibid , at page 100
- 40 Ibid , at pages 92, 110
- 41 Energy Reorganization Act of 1976, Pub L No 93-438, 88 Stat 1234 (1974), 42 U S C , sections 5811 to 5891 (1976) (Sup II 1978)
- 42 See D Bourque, supra, note 35 at pp 93-96
- 43 Ibid , at pages 96-99 and 131-38

- 44 *ibid* , at pages 137-42, the Atomic Safety Licensing Board Panel comprises 54 administrative judges, two-thirds of whom are scientists, and in practice, juries include a lawyer, an environmental specialist and an engineer or physicist
- 45 *ibid* , at page 141
- 46 Atomic Energy Control Act, 1946, L R C (1985), A-16
- 47 D Bourque, *supra*, note 35 at pages 110-116
- 48 SEAP v Atomic Energy Control Board and Eldorado Nuclear Limited (1977) 74 D L R (3d) 541 (F C A)
- 49 At least under Section 28(1) of the Act on the Federal Court of Appeal (1970) S R C , c 10
- 50 SOR/74-334, Atomic Energy Control Regulations
- 51 AGIP S P A and Atomic Energy Control Board et al , (1978), 87 D L R (3d) 530
- 52 S Charbonneau, *supra*, note 22 on pages 288-89
- 53 *ibid* , at pages 286-89 Simon Charbonneau has no hesitation in saying "Thus, unlike the rule of law which formalises the social connection on the basis of a minimum of liberty, the technical norm appears rather as a unilateral instrument of subjection at the service of an oligarchy"
- 54 Conseil d'État, 10 February 1986, Association "Les amis de la Terre", *supra*, note 32
- 55 J -P Colson "Note sous l'arrêt du Conseil d'État du 10-2-1984, Association 'Les Amis de la terre (1984)1 *Revue juridique de l'environnement*, *supra*, note 32 on page 213
- 56 *ibid* , at page 213 The author of the commentary notes "There is thus a sort of segmentation of legality which is somewhat surprising, even though the acceptance of exceptional procedures is not new in the nuclear field"
- 57 P Lagadec, *Le risque technologique majeur*, Pergamon, Collection Futuribles, 1981 at page 563
- 58 Patnck Lagadec, (*op cit*) being one of the best authors in this respect see also his publication *La civilisation du risque*, Seuil, Paris, 1981
- 59 S Charbonneau, *supra*, note 22 on page 284
- 60 D Bourcier *supra* note 4 on page 6
- 61 The experts themselves admitted there was a lack of preparedness even before the Chernobyl accident and some years after that of Three Mile Island in the United States "Although establishing an effective accident assessment capability had long been recognised (even before the Three Mile Island accident) as an important 'key' to mounting an effective and proper emergency response, this aspect of emergency preparedness, until recently suffered from a rather archaic, unimaginative "paper and pencil" approach This old approach did not in most

instances, take full advantage of existing and potentially helpful state-of-the-art technology " H E Collins and B W Emmerson, "The Agency's Role in Emergency Planning and Preparedness for Nuclear Accidents", IAEA Bulletin, Vienna, Vol 25, No 3, 1983, pages 14-18, Extracts in L'accident nucléaire, Documentation française, supra, note 15 on pages 47-48

- 62 We are speaking here of tens of thousands of years of radioactivity
- 63 Mental Health Aspects of the Peaceful Uses of Atomic Energy, World Health Organisation (WHO), Report of a study group, technical report series, No 151, Geneva, 1958 We refer to the extract quoted by P Lagadec, La civilisation du risque, supra, note 58 at page 208 From the viewpoint of mental health, the most satisfactory solution for the future of the peaceful uses of atomic energy would be to have a new generation which had learnt to live with ignorance and uncertainty " Patric Lagadec added "It is no longer possible to share power It is no longer possible to share knowledge Moreover, hardly any margin of freedom remains and knowledge is too uncertain to serve as a reliable criterion for action There is only one approach left accelerate and try to force a passage That is the analysis"
- 64 P Lagadec, supra, note 58, pages 216-17

The Regulation of Nuclear Trade in the United States

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Abstract

This article describes in great detail the various laws and regulations in the United States governing trade in nuclear and nuclear-related facilities, materials and equipment. Although the focus is upon export controls, provisions relating to imports, the control and accounting of nuclear material, physical protection, transport and emergency planning are also covered. Included are examinations of the Atomic Energy Act of 1954, as amended, the U S Code of Federal Regulations (CFR), the Nuclear Non-Proliferation Act of 1978, The Export Administration Act, the Arms Export Control Act, and the Energy Policy Act of 1992.

I INTRODUCTION

Since the inauguration of President Eisenhower's "Atoms for Peace" programme in 1953 and the passage of the Atomic Energy Act of 1954, the United States has engaged in peaceful nuclear co-operation with other nations to share the benefits of civilian nuclear energy. Such co-operation has been intended to prevent and take into account the risk of proliferation - the spread of nuclear explosives. The nuclear export control regime plays a major role in minimizing this risk. In the United States, this regime calls for United States controls continuing after export, recipient assurances that exports intended for peaceful uses will not be diverted to an explosives programme, the maintenance of international safeguards and United States prior consent rights over subsequent use of the exported facilities or materials. It also restricts the export of weapons-useable material, sensitive facilities, and classified and sensitive nuclear technology.

The licensing and regulation of nuclear materials and equipment are governed by the Atomic Energy Act of 1954, as amended. That statute, enacted by the United States Congress in 1954 and amended on numerous occasions, replaced the Atomic Energy Act of 1946, a statute enacted after the close of World War II, during which the United States military had developed and utilized atomic weapons.

* Responsibility for the text and ideas expressed lies solely with the author. The author wishes to acknowledge the efforts of Arlene A Jorgensen in the preparation of this article.

The 1946 Act had established the Atomic Energy Commission, a body of five members, to be appointed by the President. The function of the Atomic Energy Commission under the 1946 Act was focused on research and development and governmental control of production, ownership and use of fissionable materials to assure the common defence and security. The Federal Government owned atomic energy facilities and materials. The Atomic Energy Act of 1954¹ permitted private participation in the development of uses of atomic facilities and materials and set up a framework for co-operation with other nations in peaceful uses of the atom. That Act permitted private persons to build and operate production and utilization facilities² subject to licensing and regulation by the Atomic Energy Commission.

The Atomic Energy Commission was abolished by the Energy Reorganization Act of 1974 and its licensing and related regulatory functions were transferred to the newly created Nuclear Regulatory Commission (NRC)³. All other functions of the Atomic Energy Commission were transferred to the Energy Research and Development Administration (ERDA), whose functions were subsequently transferred to the Department of Energy⁴.

The purpose of this study is to describe the regulation of trade in nuclear materials and facilities and other nuclear or nuclear-related equipment in the United States, at international levels⁵. Particular emphasis is placed on exports and their controls and, in addition to the licensing of transfers, other pertinent provisions of the legislation and regulations in force are also analysed, namely those governing material control and accounting, physical protection, transport, and emergency planning. In addition, criteria for co-operation agreements are discussed. Those agreements on the peaceful uses of nuclear energy concluded by the United States are listed in Annex I.

II NUCLEAR EXPORT AND IMPORT LICENSING AND REGULATION

Prior to enactment of the Nuclear Non-Proliferation Act on 10th March 1978, the United States legal framework for exports of nuclear facilities, material and technology was relatively simple. Under the 1954 Atomic Energy Act, exports of production and utilization facilities, special nuclear material and some source material (natural uranium and thorium) were permitted under an agreement for co-operation provided for in Section 123 of that Act. Issuance of export licences and negotiation of agreements for co-operation were assigned to the Atomic Energy Commission.

1 Atomic Energy Act

The NRC was given the function of export licensing of facilities, special nuclear material, source material and by-product material under the Energy Reorganization Act, as mentioned above. In addition to the requirement that export of facilities, special nuclear material and source material be made under an agreement for co-operation, exports (or "distribution" by ERDA, later the Department of Energy) could be made upon a finding that the export would not be inimical to the common defence and security⁶.

The *Nuclear Non-Proliferation Act of 1978*, Public Law 95-242, (NNPA)⁷ made significant changes in statutory licensing requirements for exports of nuclear commodities. It amended the Atomic Energy Act to add requirements for an NRC licence for the export of component parts of facilities and other items or substances especially relevant from the standpoint of export control because of their significance for nuclear explosive purposes as determined by the NRC. The NNPA also made significant changes in United States nuclear export criteria and procedures.⁸

New export licensing procedures were incorporated in a new Section 126 of the Atomic Energy Act, in Commission regulations in 10 CFR Part 110, and in procedures published by Executive Branch agencies in the Federal Register pursuant to Section 126.

The procedural requirements for issuance of licences are NRC transmittal of the licence application to the Departments of State, Energy, Defence, Commerce, and the Arms Control and Disarmament Agency. Within fifteen days, each agency must advise the State Department as to whether its preliminary view favours issuance, as well as what additional steps need be taken. Within fifteen days from that date, the State Department circulates a proposed Executive Branch judgment. A response by each agency is required within ten days from receipt of the proposed judgment. Unless the Secretary of State authorizes additional time in the national interest and so informs the Congress, an Executive Branch judgment must be transmitted to the NRC within sixty days from receipt of the application. The judgment must specifically address the extent to which the export criteria in the NNPA are met and the extent to which the recipient country has adhered to its agreement for co-operation. Meanwhile, the Commission considers the licence application concurrently with Executive Branch consideration. The Commission must act on the application within sixty days after receipt of the Executive Branch judgment.

As required by the NNPA, Executive Branch procedures for the preparation of the Executive Branch judgment on licence applications were published in the Federal Register. Those procedures establish certain categories of exports for which no findings or co-ordination are required because they lack significance for nuclear explosive purposes and thus are not inimical to the common defence and security. Those procedures also established an "Interagency Sub-group on Nuclear Export Co-ordination" (SNEC) to monitor and facilitate interagency processing of review of licence applications, among other things.

An Executive Branch judgment that the export would be inimical to the common defence and security requires NRC denial of the license application. The Commission must issue the licence if it finds either that the statutory criteria and other requirements are met or finds that there is no material changed circumstance associated with a new application from those existing at the time of the last application for a licence to export to the same country if that application was approved under the Nuclear Non-Proliferation Act (NNPA).

If the NRC fails to act within the prescribed sixty day period, the applicant must be informed of the reason for the delay. If the NRC has not acted on an application within an additional sixty days, the President may authorize the export upon finding that further delay would be excessive and that withholding the export would be seriously prejudicial to United

States non-proliferation objectives or would otherwise jeopardize the common and security (unless procedures for public participation have been commenced or further information has been requested of the Executive Branch) The Presidential authorization is subject to Congressional review

If the NRC cannot, based upon a reasonable evaluation of the assurances provided and other information available to the United States government, make the finding that the statutory criteria or their equivalent are met, the Commission must issue its decision to that effect and submit the licence application to the President. The President may authorize the export by Executive Order if he finds that denial would be seriously prejudicial to achievement of United States non-proliferation objectives or would otherwise jeopardize the common defence and security. The Executive Order may be overridden by a joint resolution of both houses of Congress within sixty days of continuous session of Congress.

Pursuant to the direction in Section 304(b) of the Nuclear Non-Proliferation Act, the Commission has established procedures for public participation in export licensing. Those procedures are set out in Subparts H, I and J of Part 110. The procedures give the Commission discretion to hold a hearing or otherwise permit public participation if it finds that such a hearing or participation would be in the public interest and would assist the Commission in making the required statutory determinations. Part 110 provides that hearings may be oral or consist of written submissions. As authorized by Section 304(c) of the NNPA, the procedures for public participation do not include on-the-record, trial-type provisions such as cross-examination and discovery, and the Commission's decision is not required to be made on the basis of the hearing record. No oral public hearings have been held pursuant to that section.

In addition to the foregoing procedures, the Omnibus Diplomatic Security and Antiterrorism Act of 1986 (Public Law 99399), 27th August 1986, added a new Section 133 to the Atomic Energy Act. The Section provides that, in addition to other applicable requirements, a licence may be issued by the NRC for the export of more than 2 kilograms of plutonium or more than 20 kilograms of uranium enriched to more than 20 per cent, and approval may be granted by the Secretary of Energy under Section 131 of the Act (discussed infra) for the transfer of such material only after the Secretary of Defence has been consulted on whether the physical protection of that material during the export or transfer will be adequate to deter theft, sabotage, and other acts of international terrorism which would result in the diversion of that material. If, in the view of the Secretary of Defence based on all available intelligence information, the export or transfer might be subject to a genuine terrorist threat, the Secretary must provide to the Commission or the Secretary of Energy, as appropriate, his written assessment of the risk and a description of the actions the Secretary of Defence considers necessary to upgrade physical protection measures.

The Energy Policy Act of 1992, Public Law 102-486, signed into law on 24th October 1992, made further changes in U.S. statutory licensing requirements for exports and imports of nuclear equipment and nuclear material as well as changes with respect to domestic licensing and regulation of nuclear commodities.

The Energy Policy Act of 1992 added new restrictions on the export of uranium, in a new Section 134 of the Atomic Energy Act. That section permits the issuance of a licence for export of uranium enriched to 20 per cent or more in the isotope-235 to be used as a fuel or target in a nuclear research or test reactor only if, in addition to other requirements of the Atomic Energy Act, the NRC determines that

- 1) there is no alternative nuclear reactor fuel or target enriched in the isotope 235 to a lesser percent than the proposed export, that can be used in that reactor,
- 2) the proposed recipient of that uranium has provided assurances that, whenever an alternative nuclear reactor fuel or target can be used in that reactor, it will use that alternative in lieu of highly enriched uranium, and
- 3) the United States Government is actively developing an alternative nuclear reactor fuel or target that can be used in that reactor

The Section adds definitions as follows

- 1) the term 'alternative nuclear reactor fuel or target' means a nuclear reactor fuel or target which is enriched to less than 20 percent in the isotope U-235,
- 2) the term 'highly enriched uranium' means uranium enriched to 20 percent or more in the isotope U-235, and
- 3) a fuel or target 'can be used' in a nuclear research or test reactor if
 - a) the fuel or target has been qualified by the Reduced Enrichment Research and Test Reactor Program of the Department of Energy, and
 - b) use of the fuel or target will permit the large majority of ongoing and planned experiments and isotope production to be conducted in the reactor without a large percentage increase in the total cost of operating the reactor

The Chairman of the NRC is required to file a report to the Congress, not later than 90 days after enactment of the Energy Policy Act, after consulting with other relevant agencies, detailing the current disposition of previous United States exports of highly enriched uranium, including

- a) their location,
- b) whether they are irradiated,
- c) whether they have been used for the purpose stated in their export licence, and
- d) whether they have been used for an alternative purpose and, if so, whether such alternative purpose has been explicitly approved by the Commission

To the maximum extent possible, the report must include

- a) exports of highly enriched uranium to the European Atomic Energy Community (EURATOM), and
- b) subsequent retransfers of such material within EURATOM, without regard to the extent of United States control over such retransfers

NRC transmitted the required report to the Congress on 25th January 1993. It was not possible for the NRC to include information on subsequent retransfers of high enriched uranium within EURATOM over which the United States had no control.

a) Criteria for issuance of licences to export facilities, special nuclear material and source material

The applicable criteria for export of facilities, special nuclear material and source material are found in Sections 127 and 128 of the Atomic Energy Act, added by the NNPA, and other sections of the Atomic Energy Act relating to licensing of facilities and materials (Sections 103 a and d and 104 a. and d for facilities, Sections 53 a , 54 c , and 57 c (2) and d for special nuclear material and Section 64 for source material) The criteria in the NNPA prescribe specific requirements which must be met. The Act does not define the factors that enter into the other general criterion of "not inimical to the common defence and security". However, experience in applying this criterion indicates to some extent the factors that may be considered.

Section 127 criteria

The criteria set out in Section 127 of the Atomic Energy Act were drafted so as largely to be satisfied under the basic requirements in the then current agreements for co-operation. The language of the Senate Report on the bill which later became the NNPA (S 897) and the language of Section 126 a (2), which requires that the criteria or their equivalent be determined to be met, made this clear. The criteria need not be satisfied only by provisions in a United States agreement for co-operation, but may be satisfied by other means, such as adherence to the Treaty on the NonProliferation of Nuclear Weapons (NPT) or the provision of supplementary assurances. The criteria in this Section (and Section 128) do not apply to licences for non-nuclear end uses.

Criterion 1 calls for the International Atomic Energy Agency (IAEA) safeguards, as required by Article III 2 of the NPT, to be applied with respect to source material, special nuclear material and production or utilization facilities, proposed to be exported, previously exported under the applicable agreement for co-operation, and to special nuclear material used in or produced through the use of such facilities or material.

Criterion 1 does not apply to exports to nuclear weapon States, because Article III 2 of the NPT requires that provision of source or special fissionable material and equipment or material especially designed and prepared for processing, use, or production of special fissionable material by any party to the Treaty to any non-nuclear weapon State for peaceful purposes be subject to IAEA safeguards

Criterion 1 is, of course, satisfied by the importing country having an NPT-type safeguards agreement with the IAEA (an INFCIRC/153-type agreement), but it does not preclude exports to countries having only INFCIRC/66 Rev 2-type safeguards agreements with the IAEA. This is consistent with the interpretation of Article III 2 of the NPT.

Criterion 2 requires that no exported materials and facilities proposed to be or previously exported under the applicable agreement for co-operation and no special nuclear material produced through their use, be used for any nuclear explosive device or for research on or development of any nuclear explosive device. Criterion 2 applies to all States, not only non-nuclear weapon States. Non-nuclear weapon States party to the NPT satisfy this criterion by reason of their ratification of that Treaty. Nuclear-weapon States party to the NPT are committed to not assisting other countries to acquire a nuclear explosive device.

Non-NPT countries and nuclear-weapon States may provide assurances of no nuclear explosive uses through ad hoc assurances or some other mechanism such as voluntary offers to apply IAEA safeguards to their peaceful nuclear activities, or application of EURATOM safeguards in the case of nuclear-weapon States (the United Kingdom and France). Agreements for co-operation uniformly preclude use of United States-origin exported or produced materials for atomic weapons or for any other "military purpose". The United States position has been that this provision precludes use of United States exports for any so-called "peaceful" nuclear explosive device, since the technology of such devices is not distinguishable from that of weapons. Agreement with this position by States not party to the NPT having agreements for co-operation with the United States has been considered equivalent to meeting the stated criterion.

Criterion 3 requires that adequate physical security measures must be maintained with respect to exported or produced materials and to exported facilities.

It also provides that following the effective date of regulations promulgated by the NRC as required by Section 304(d) of the Nuclear Non-Proliferation Act, physical security measures shall be deemed adequate if they provide a level of protection equivalent to that required by NRC regulations.

The Commission has promulgated regulations which prescribe physical security measures deemed adequate to satisfy this criterion. Consistent with Congressional direction in Section 304(d) of the NNPA, that the NRC promulgate regulations establishing levels of physical security which are not less strict than those established by any international guidelines to which the United States subscribes and which, in its judgment, provide adequate protection to nuclear facilities and source and special nuclear material, the Commission's regulations (10

CFR Section 110.43) require that as a minimum, physical security measures in a recipient country provide protection comparable to that in IAEA publication INFCIRC/225, Rev. 2

None of the United States agreements for co-operation in effect when the NNPA came into force had provisions pertaining to physical security. Determinations that criterion 3 is met have been made by consideration of available information, including country visits and by written assurances that the required physical protection will be maintained. Assurances that levels specified in the Nuclear Suppliers Group (the so-called London Club)⁹ physical security guidelines are being met have been accepted by the Commission as equivalent to the criterion specified in Part 110.

Criterion 4 requires that no exported material, facilities, sensitive nuclear technology, or special nuclear material produced through the use of exported material, will be retransferred to another nation or group of nations except with the prior approval of the United States. It does not require a United States veto right over retransfer of special nuclear material produced through use of non-United States-origin material in United States-supplied reactors.

All agreements for co-operation now contain a United States veto right over retransfer to United States supplied material. With respect to retransfer of produced special nuclear material, United States agreements for co-operation also presently provide rights of approval of the United States in some form. [Some agreements provide that United States-origin produced special nuclear material may be retransferred 1) to a recipient having an appropriate agreement for co-operation with the United States, or 2) under safeguards acceptable to the United States. The criterion has been considered to be satisfied in such cases by virtue of the fact that the United States must agree that the agreement for co-operation is "appropriate" or that the safeguards in the recipient nation are "acceptable"]

Criterion 5 requires that the United States have prior approval rights over the reprocessing of United States-supplied material or special nuclear material produced from such material, and on the alteration in form or content of irradiated fuel elements containing United States-supplied fuel removed from a reactor. Like criterion 4, criterion 5 does not require United States consent to reprocessing of non-United States origin fuel irradiated in United States-supplied reactors.

The bilateral co-operation agreement with the IAEA did not give the United States prior approval rights over either retransfers or reprocessing and the agreement with EURATOM did not give the United States prior approval rights over reprocessing. However, Section 126 of the Atomic Energy Act gives the President authority to exempt these groups of nations from criteria 4 and 5 upon a determination that failure to continue co-operation would be seriously prejudicial to the achievement of United States non-proliferation objectives or would otherwise jeopardize the common defence and security. The agreement with the IAEA has been amended to provide for United States approval rights. The Commission of the European Communities and the United States are presently engaged in discussions concerning their Agreement for Co-operation. The exemption of EURATOM from application of the reprocessing approval criterion during these discussions provided by Section 126a(2) of the Atomic Energy Act has

been extended to the President yearly until 10th March 1994. Only one more extension is permitted by the Act, since the Agreement for Cooperation expires in 1995.

Some agreements provide that reprocessing may be performed upon a joint determination of the parties that safeguards may be effectively applied in a reprocessing facility in the recipient country. Since under this type of provision, the United States can withhold consent by declining to make a "joint" determination, the criterion has been deemed satisfied.

Criterion 6 for export of sensitive nuclear technology, the foregoing conditions are applicable to any nuclear material or equipment produced or constructed under the jurisdiction of any recipient nation or group of nations by or through the use of any such exported sensitive nuclear technology.

Section 128 criterion

Section 128 of the Atomic Energy Act provides that licence applications for export to a non-nuclear-weapon State filed after 10th September 1979 or any such application under which the first export would occur after 10th March 1980, meet the criterion of "full-scope safeguards" - this is, that IAEA safeguards be maintained on all peaceful nuclear activities in the State at the time of the export. All NPT parties which have entered into safeguards agreements with IAEA satisfy this criterion. The criterion in Section 128 does not require recipients to be parties to NPT, or to have NPT safeguards agreements (INFCIRC/153-type agreements), but requires that, as a factual matter, a non-nuclear-weapon State recipient have all its peaceful nuclear activities under IAEA safeguards, thus permitting continued exports to non-NPT countries with no unsafeguarded facilities.

b) Non-inimicality to the common defence and security

The Nuclear Non-Proliferation Act (NNPA), while mandating additional criteria for issuance of export licences, retained the Atomic Energy Act criterion that exports not be inimical to the common defence and security. However, the Senate report on the bill that became the NNPA, S 897, stated that in the absence of unusual circumstances it was believed that any proposed export meeting the criteria set forth in Sections 127 and 128 would also satisfy the non-inimicality standard.

The "non-inimical" criterion has been used to consider policies which are consistent with (but not mandated by) the NNPA, such as reduction of the amount of highly enriched uranium exported. Decisions on exports of sensitive material - even though meeting the specific criteria in Section 127 and 128 - are reviewed for their overall impact on the common defence and security. Thus, this criterion is used as a mechanism for ensuring that nuclear export decisions are consistent with and supportive of United States national security interests.

c) Criteria for issuance of licences to export components or items or substances especially relevant from the standpoint of export control because of their significance for nuclear explosive purposes (Section 109 of the Atomic Energy Act)

Exports of reactor components not classified as a production or utilization facility (defined in 10 CFR 110.2), but specifically designed or prepared for use in such a facility, or other substances or items especially relevant from the standpoint of export control because of their significance for nuclear explosive purposes are now subject to NRC licensing. Prior to enactment of the NNPA, such items were subject to licensing by the Department of Commerce. The statutory licensing criteria for export of items are four of those discussed above: a) application of IAEA safeguards as required by Article III.2 of the NPT, b) no use in or for research and development of a nuclear explosive device, c) no retransfer without United States prior consent and d) non-inimicality to the common defence and security.

The Commission has specified components, items and substances subject to the Section 109 licensing criteria in 10 CFR Part 110, Section 110.8. The components, items and substances include, among other things: a) heavy water production plants, nuclear reactor fuel fabrication plants and specially designed or prepared equipment, parts or components for such plants and for production or utilization facilities, b) heavy water (deuterium), and c) nuclear grade graphite.

All of the items subject to NRC licensing under Section 109 and 10 CFR Part 110 are not, per se, necessarily the subject of an IAEA safeguards agreement. Such items are determined to meet the first criterion of Section 109 by reference to application of IAEA safeguards to the facility in which they are used. United States controls over retransfers are established by inclusion in an agreement for co-operation or by separate assurances.

The procedures for obtaining an export licence for components and other Section 109 items are the same as those described above for facilities, special nuclear and source material.

Termination of exports. Section 129 of the Atomic Energy Act sets out conditions under which export of source or special nuclear material, nuclear facilities or items subject to Section 109 shall be terminated. Although the provisions of Section 129 of the Act do not constitute specific criteria for issuance of export licences by the NRC, that Section does, as a practical matter, impose criteria that require termination by the President, of licenses to export nuclear materials and equipment still in the United States. These "criteria" are included in Section 110.45 of NRC regulations.

The conditions for termination of licences in Section 129 are: for non-nuclear-weapon States, detonation of a nuclear explosive device, termination or abrogation of IAEA safeguards, material violation of an IAEA safeguards agreement, activities involving source or special nuclear material and having direct significance for manufacture or acquisition of nuclear explosive devices, and failure to take steps to terminate such activities. For all countries, the circumstances under which exports will be terminated are: 1) material violation of an agreement for co-operation with the United States or an agreement under which United States equipment or material has been exported, 2) assistance to a non-nuclear weapon State to

engage in activities involving source or special nuclear material having direct significance for manufacture or acquisition of a nuclear explosive device and failure to take steps toward terminating such assistance, 3) conclusion of an agreement for transfer of reprocessing equipment, materials or technology to the sovereign control of a non-nuclear weapon State except in connection with an international fuel cycle evaluation in which the United States is a participant or pursuant to a subsequent international agreement or understanding to which the United States subscribes

The President must make a determination that the above described actions have occurred after 10th March 1978. The President may "waive" cessation of exports, subject to Congressional review if he determines that cessation would be seriously prejudicial to the achievement of United States non-proliferation objectives or would otherwise jeopardize the common defence and security

The Omnibus Diplomatic Security and Antiterrorism Act of 1986, *supra*, added a new Section 132 to the Atomic Energy Act authorizing the President to suspend nuclear co-operation with any nation or group of nations which has not ratified the Convention on the Physical Protection of Nuclear Material

d) Exports of by-product material

Exports of by-product material are not subject to the Nuclear Non-Proliferation Act (NNPA). Therefore, as a matter of law, no Executive Branch review is required. However, NRC regulations in Section 110.41 of 10 CFR Part 110 provide for Executive Branch review of exports of more than 100 curies of tritium, the initial export of nuclear material or equipment to a foreign reactor, and an export to a restricted or embargoed destination. A general licence is provided in 10 CFR Section 110.23 for export of certain kinds and quantities of by-product material. The criterion for issuance of export licences for by-product material is that the export not be inimical to the common defence and security.

e) Limitation on export of source or special nuclear material for enrichment or components of enrichment, first reprocessing or heavy water production facilities

Section 402(a) of the NNPA imposes special additional limitations on enrichment of exported material. That section prohibits subsequent enrichment of United States origin special nuclear material or source material except with the prior approval of the United States and prohibits export for enrichment or reactor fuelling to any nation or group of nations which has, after 10th March 1978, entered into a new or amended agreement for co-operation with the United States except pursuant to this agreement for cooperation.¹⁰

Under Section 402(b) of the NNPA, major critical components of an enrichment reprocessing or heavy water production facility cannot be exported under any agreement for co-operation unless the agreement specifically designates such components as items to be exported pursuant to the agreement.

f) Effects of exports on the public health, safety and environment

Statutory criteria for exports of facilities and materials in the Atomic Energy Act include the criterion that the export will not be inimical, or present a hazard to, the health and safety of the public ¹¹ However, the NRC has interpreted this criterion to apply only to the health and safety of the United States public Similarly, it has interpreted the National Environmental Policy Act to require consideration only of environmental effects in the United States and on the "global commons" - the high seas and Antarctica, [3 NRC 563 (1976), 5 NRC 1332 (1977)] ¹² However, a decision of 29th January 1993 by the U S Court of Appeals for the District of Columbia Circuit in *Environmental Defence Fund, Inc v Massey* suggested that the presumption against extraterritorial application of United States laws does not apply to NEPA to the extent that the United States proposed activity will be taking place within Antarctica (The proposed activity was disposal of food waste from the U S McMurdo Station in Antarctica, which did not involve a nuclear activity or nuclear material)

Additionally, the Nuclear Regulatory Commission has published proposed amendments to its export regulations in 10 CFR Part 110 to conform U S policies and regulation to the voluntary Code of Practice to guide Member States in the development and harmonization of policies and laws on the international transboundary movement of radioactive waste, adopted by the General Conference of the IAEA in September, 1990

The proposed amendments would require a person to file an application for a specific licence to export or import low-level radioactive waste The applicant would be required to include information on the volume of wastes, the waste classification, its chemical and physical characteristics and whether a disposal site operator had agreed to accept the waste Presently, export of low-level radioactive waste is authorized by the general licence in 10 CFR Section 110.27

The NRC review would be governed by the following criteria: Would a proposed export or import minimize public health, safety, and environmental impacts in the United States and the global commons? Would a proposed export be acceptable to the competent regulatory authority of the receiving country? Would a proposed export be inimical to the common defense and security interests of the United States? No export licence would be issued unless it was clear that the waste would be acceptable to the government of the receiving country

On 25th February 1991, the United States signed the Convention on Environmental Impact Assessment in a Transboundary Context That Convention, which the Department of State has concluded is an Executive Agreement rather than a treaty and thus does not require ratification by the Senate, was developed through the auspices of the Economic Commission for Europe (ECE)

The Convention requires establishment of an environmental impact procedure with respect to covered activities that would cause significant adverse transboundary impact, such procedures to permit public participation The documentation required includes that which is ordinarily prepared by the Nuclear Regulatory Commission pursuant to its regulation to

implement the National Environmental Policy Act, 10 CFR Part 51, with respect to the covered activities

The installations covered are listed in Appendix I of the Convention and, with respect to NRC-licensed activities, include the following

- Thermal power stations and other combustion installations with a heat output of 300 megawatts or more and nuclear power stations and other nuclear reactors (except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load)
- Installations solely designed for the production or enrichment of nuclear fuels for the reprocessing of irradiated nuclear fuels or for the storage, disposal and processing of radioactive waste
- Waste-disposal installations for the incineration, chemical treatment or landfill of toxic and dangerous wastes

Guidelines have been circulated by the Council on Environmental Quality (CEQ) to NRC and other agencies to implement the Convention. Apart from a provision [Article 2(1)] intended to restate customary international law, the Convention is wholly procedural, setting forth a process for notification, consultation, documentation and information exchange regarding environmental impacts. Accordingly, the NRC could fulfill the requirements applicable to its licensing function by amending its regulation implementing the National Environmental Policy Act, 10 CFR Part 51, to add the Canadian Government to those to whom environmental reports and environmental impact statements on licensed installations must be distributed

g) Agreements for co-operation

The Atomic Energy Act requires that exports of nuclear facilities and special nuclear material (except some plutonium-238 and other special nuclear material exempted by the Commission) be made pursuant to an agreement for co-operation. Although source material export licences do not, as a matter of law, require an agreement for co-operation, as a matter of fact the NRC does require that exports of source material for nuclear end uses be made pursuant to such a agreement

The United States currently has agreements for co-operation with twenty-three States, Taiwan, the European Atomic Energy Community (EURATOM), and the IAEA. The NNPA directed the President to seek to renegotiate existing agreements in order to obtain the additional controls which the NNPA requires for new agreements. Since the enactment of the NNPA, fifteen new or amended agreements have entered into force

Nuclear co-operation can take place under a bilateral agreement for cooperation. All co-operation by the United States with the twelve States which are a part of the European

Community is undertaken through the United States-EURATOM agreements or, in the case of direct transfer to Spain and Portugal, under the agreements for co-operation with those countries now in force. Agreements for co-operation, with the exception of EURATOM, essentially meet Section 123 requirements. [Adherence to the NPT is not a requirement for such an agreement, but adherence has been encouraged by the United States in negotiations.] In sum, the requirements of Section 123 are

- 1) a guarantee that safeguards as set forth in the agreement will be maintained with respect to all nuclear materials and equipment transferred pursuant thereto, and with respect to all special nuclear material used in or produced through the use of such nuclear materials and equipment, so long as the material or equipment remains under the jurisdiction or control of the co-operating party, irrespective of the duration of other provisions in the agreement or whether the agreement is terminated or suspended for any reason,
- 2) in the case of non-nuclear-weapon states, a requirement that IAEA safeguards be maintained with respect to all nuclear materials in all peaceful nuclear activities within the territory of such state, under its jurisdiction, or carried out under its control anywhere,
- 3) except in the case of those agreements arranged pursuant to subsection 91 c , a guarantee by the co-operating party that no nuclear materials and equipment or sensitive nuclear technology to be transferred pursuant to the agreement, and no special nuclear material produced through the use of any nuclear materials and equipment or sensitive nuclear technology transferred pursuant to the agreement, will be used for any nuclear explosive device, or for research on or development of any nuclear explosive device, or for any other military purpose,
- 4) except in the case of those agreements arranged pursuant to subsection 91 c and agreements with nuclear-weapon States, a stipulation that the United States shall have the right to require the return of any nuclear materials and equipment transferred pursuant thereto and any special nuclear material produced through the use thereof if the co-operating party detonates a nuclear explosive device or terminates or abrogates an agreement providing for IAEA safeguards,
- 5) a guarantee by the co-operating party that any material or any Restricted Data transferred pursuant to the agreement and, except in the case of agreements arranged pursuant to subsection 91 c , 144 b or 144 c , any production or utilization facility transferred pursuant to the agreement or any special nuclear material produced through the use of any facility or through the use of any material transferred pursuant to the agreement, will not be transferred to unauthorized persons or beyond the jurisdiction or control of the co-operating party without the consent of the United States,
- 6) a guarantee by the co-operating party that adequate physical security will be maintained with respect to any nuclear material transferred pursuant to the agreement

and with respect to any special nuclear material, used in or produced through the use of any material, production facility, or utilization facility transferred pursuant to the agreement,

- 7) except in the case of agreements for co-operation arranged pursuant to subsection 91 c , 144 b , or 144 c , a guarantee by the co-operating party that no material transferred pursuant to the agreement and no material used in or produced through the use of any material, production facility, or utilization facility transferred pursuant to the agreement will be reprocessed, enriched or (in the case of plutonium, uranium 233, or uranium enriched to greater than twenty percent in the isotope 235, or other nuclear materials, which have been irradiated) otherwise altered in form or content without the prior approval of the United States,
- 8) except in the case of agreements for co-operation arranged pursuant to subsection 91 c , 144 b , or 144 c , a guarantee by the co-operating party that no plutonium no uranium 233 and no uranium enriched to greater than twenty percent in the isotope 235 transferred pursuant to the agreement or recovered from any source or special nuclear material so transferred or from any source or special nuclear material used in any production facility or utilization facility transferred pursuant to the agreement will be stored in any facility that has not been approved in advance by the United States, and
- 9) except in the case of agreements for co-operation arranged pursuant to subsection 91 c , 144 b or 144 c , a guarantee by the co-operating party that any special nuclear material, production facility, or utilization facility produced or constructed under the jurisdiction of the co-operating party by or through the use of any sensitive nuclear technology transferred pursuant to such agreement for co-operation will be subject to all the requirements specified in Section 123

The President may exempt a proposed agreement for co-operation (except an agreement arranged pursuant to subsection 91 c , 144 b , or 144 c) from any of foregoing requirements if he determines that inclusion of any such requirement would be seriously prejudicial to the achievement of United States non-proliferation objectives or otherwise jeopardize the common defence and security. However, the President cannot exempt a proposed agreement from any of the requirements that are also criteria for the issuance of export licences under sections 127 and 128 of the Act

The United States has a programme to negotiate new agreements for co-operation and to renegotiate existing ones. By statute this activity is undertaken by the Secretary of State with the technical assistance and concurrence of the Secretary of Energy and in consultation with the Director of the Arms Control and Disarmament Agency (ACDA)

After a negotiated text is initialed, the proposed agreement together with the views and recommendations of the Secretaries of State and Energy, the NRC, and the Director of ACDA is submitted to the President. The Director of ACDA also submits an unclassified Nuclear Proliferation Assessment Statement (NPAS) which must analyse the consistency of the

agreement with the requirements of the Act, with specific attention as to whether it is consistent with the criteria in section 123 and "regarding the adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in the agreement to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose "

After making a determination that the performance of the proposed agreement will promote and not constitute an unreasonable risk to the common defence and security, the President authorizes its execution. Normally, the agreement, signed by representatives of the two governments involved, is submitted to Congress together with the presidential approval and determination, the NPAS, and the views of the concerned agencies. A thirty day period for consultation between the President and cognizant Congressional committees concerning the consistency of the agreement with the requirements of the Atomic Energy Act is required, followed by a period of sixty days of continuous session during which Congressional hearings must be held. If Congress takes no action to disapprove the agreement by joint resolution during that period, the agreement can then be brought into force.

h) Assistance to foreign atomic energy activities

Section 57b of the Atomic Energy Act provides that

" It shall be unlawful for any person to directly or indirectly engage in the production of any special nuclear material outside of the United States except 1) as specifically authorized under an agreement for co-operation made pursuant to Section 123, including a specific authorization in a subsequent arrangement under Section 131 of this Act, or 2) upon authorization by the Secretary of Energy after a determination that such activity will not be inimical to the interest of the United States. Provided, that any such determination by the Secretary of Energy shall be made only with the concurrence of the Department of State and after consultation with the Arms Control and Disarmament Agency, the Nuclear Regulatory Commission, the Department of Commerce, and the Department of Defence "

Section 57b is implemented by the Department of Energy in its regulation 10 CFR Part 810. That regulation indicates what activities have been generally authorized by the Secretary, which activities require a specific authorization by the Secretary, and how to request such authorization.

Technology relating to processing, enrichment, heavy water production or plutonium fuel fabrication requires a specific authorization. However, furnishing information or assistance to prevent or correct a current or imminent radiological emergency posing a significant danger to public health and safety, is generally authorized, provided the Department of Energy is notified in advance. Transfer of technology to specified States also requires a specific authorization.

When a specific authorization by the Secretary of Energy is sought, he must determine that the activity for which the export will be utilized "will not be inimical to the interest of the United States" When a request for such an authorization is received, it is distributed by the Department of Energy to the Arms Control and Disarmament Agency (ACDA), the Departments of State, Commerce, and Defence, and the NRC for review in accordance with substantially the same procedures used for consideration of NRC export licences If unanimous concurrence of those agencies is not obtained, dispute resolution procedures through the Interagency Sub-Group on Nuclear Export Co-Ordination (SNEC) are available, however, in the case of such authorizations, the Secretary of Energy may act after consultation with the concerned agencies and with the concurrence of the State Department

1) Subsequent arrangements

Subsequent arrangements are defined by Section 131 of the Atomic Energy Act as arrangements entered into by any agency or department of the United States Government with respect to co-operation with any nation or group of nations (but not purely private or domestic arrangements) involving nuclear supply contracts, approvals for retransfer under an agreement for co-operation, arrangements for physical security, safeguards, or the storage or disposition of irradiated fuel elements and any other arrangements which the President finds to be important from the standpoint of preventing proliferation

It is through the subsequent arrangement process that the United States exercises its consent rights in agreements for co-operation over retransfer and reprocessing of nuclear material and equipment subject to such agreements, and enters into enrichment and other supply contracts and safeguards arrangements

A request for a subsequent arrangement is filed with the Department of Energy or in certain cases initiated by the Department of Energy which transmits the request to ACDA, the Departments of State, Commerce, Defence, and the NRC No later than fifteen days after receipt of each request the five agencies must review the request and provide the Department of Energy with preliminary views, including whether the request will involve more extensive consideration than normal or whether additional information is required

Thereupon, within fifteen days, the Department of Energy prepares and transmits to the other agencies its proposed subsequent arrangement or other course of action Within twenty days of receipt of a subsequent arrangement proposed by the Department of Energy, all agencies must provide written views to the Office of Nuclear Affairs at the Department of Energy The ACDA response must state whether it intends to prepare an unclassified Nuclear Proliferation Assessment Statement (NPAS), which in the case of a subsequent arrangement may be prepared if, in ACDA's view, a proposed subsequent arrangement might significantly contribute to proliferation

After receipt of all agency views and, if necessary, the NPAS the Secretary of Energy with the concurrence of the Secretary of State, decides whether to enter into the proposed subsequent arrangement This decision, along with the determination of the Secretary of

Energy that the arrangement will not be inimical to the common defence and security, must be published in the Federal Register. Subsequent arrangements for approval of reprocessing or retransfer of produced plutonium in quantities greater than 500 grams to a non-nuclear weapon State require a further determination by the Secretary of Energy that such activities "will not result in a significant increase in the risk of proliferation", and must be reported to the Congress and take effect after fifteen days of continuous session. Any subsequent arrangement involving the transfer of spent power reactor fuel to the United States for storage or disposition is subject to a special congressional review mechanism set forth in Section 131.

If any disagreements arise during the Executive Branch processing of a subsequent arrangement, they are settled using the same procedures as for NRC licences.

2 Export Administration Act

Under the Export Administration Act of 1979 (50 U.S.C. App. 2401), the United States Department of Commerce regulates the export of dual-use, nuclear-related goods and technology. Section 309(c) of the Nuclear Non-Proliferation Act (NNPA) provides for the publication of procedures regarding the control by the Department over all export items, other than those licensed by the NRC, which could be, if used for purposes other than those for which the export is intended, of significance for nuclear explosive purposes. The procedures are required to provide for prior consultation, as required, with the Departments of State, Energy and Defence, the ACDA, and NRC. The procedures established pursuant to the Nuclear Non-Proliferation Act of 1978 on 16th May 1984 (49 F.R. -20780) provided that export licence applications for commodities which, if used for purposes other than those for which the export is intended, could be of significance for nuclear explosive purposes, as well as any other applications which may involve possible nuclear uses, shall be reviewed by the Department of Commerce in consultation with the Department of Energy. When either the Department of Commerce or the Department of Energy believes that because of the proposed destination of the exports, its timing or other relevant considerations - a particular application should be reviewed by other agencies, or denied, such application shall be referred to the SNEC. The SNEC then provides its advice and recommendations to the Department of Commerce.

The Export Administration Act expired on 30th September 1990. Exports subject to that Act have continued to be authorized under Title II of the International Emergency Economic Powers Act (Public Law 95-223, 50 U.S.C. 1701 ff.) and Executive Order 12730. The Export Administration Act may be reenacted in the 103rd Congress, as contained in a bill introduced in 1993, H.R. 750. That bill has been passed by the House of Representatives and is awaiting Senate action.

Dual-use items referred to in the NNPA are contained in the Nuclear Referral List that is included in the Commodity Control List in Commerce Department regulations. The Nuclear Referral List includes commodities which could be of direct or indirect use in the production of special nuclear material or nuclear explosive development and testing, e.g., state-of-the-art

computers, flash X-rays, lasers, or high-speed cameras Exports of such items require a validated licence To obtain an export licence, an application is filed with the Commerce Department Any application for an item on the Nuclear Referral List is generally referred to the Department of Energy for technical review, and the Department of Energy will concur in the proposed export if no proliferation problem is present In such cases the Commerce Department will issue the licence However, applications which, in the view of the Department of Energy or the Commerce Department, raise policy considerations or other concerns are referred to the Interagency Sub-Group on Nuclear Export Co-ordination for review by the concerned Executive Branch agencies and the NRC The SNEC provides the Department of Commerce with guidance concerning the type of cases which should receive full review Any disagreements with respect to approval of the application are settled using the same dispute settlement procedures as for consideration of NRC licences

There are no express statutory criteria which need to be met in the licensing of dual-use items When evaluating an export licence application for dual-use equipment the Department of Commerce considers, among other things, a) the stated end use b) the sensitivity of the particular item and its availability elsewhere, c) the assurances given in the particular case and d) the non-proliferation credentials of the importing country

3 Arms Export Control Act

Section 38 of the Arms Export Control Act, 22 USC 2778, authorizes the President to control the import and export of defence articles and defense services and to provide foreign policy guidance to persons in the United States involved in the export and import of such articles and services The President is authorized to designate those items which shall be considered as defence articles and defence services and to promulgate regulations for the import and export of such articles and services The items so designated constitute the United States Munitions List The Arms Export Control Act was amended by Section 509 of the Omnibus Diplomatic Security and Antiterrorism Act of 1986, supra, to prohibit export of items on the Munitions List to any country which the Secretary of State has determined for purposes of Section 6(j)(1)(A) of the Export Administration Act of 1979, has repeatedly provided support for acts of international terrorism The prohibition is subject to waiver by the President upon his determination that the export is important to the national interests of the United States He must submit a report to Congress justifying his determination and describing the proposed export Any waiver expires at the end of ninety days unless Congress enacts a law extending the waiver

Decisions on issuing export licences under Section 38 are made in co-ordination with the Director of the Arms Control and Disarmament Agency (ACDA), taking into account the Director's opinion as to whether the export of an article will contribute to an arms race increase the possibility of outbreak or escalation of conflict or prejudice the development of bilateral or multilateral arms control arrangements

Subsection (b) requires every person (other than an officer or employee of the United States Government acting in an official capacity) who engages in the business of manufacturing, exporting, or importing any defence articles or defence services to register with the United States Government agency charged with the administration of Section 38 and pay a registration fee which shall be prescribed by regulation

The functions of the President under Section 38 have been delegated to the Secretary of State, and are carried out by the Office of Defence Trade Control of the State Department

The International Traffic in Arms Regulations (ITAR) which carry out the purposes of Section 38 are found in Title 22, Parts 120-130 of the Code of Federal Regulations. As to the relationship with Department of Commerce regulations under the Export Administration Act, Section 120.4 of 22 CFR Part 120 expressly provides that if an article or service is placed on the Munitions List, its export is regulated exclusively by the Department of State

22 CFR Part 121 is the United States Munitions List. The main categories of items included on the List relevant to nuclear purposes include

- Naval nuclear propulsion plants, their prototypes and special facilities for their construction, support, and maintenance, including any machinery, device, component, or equipment specifically developed, designed or modified for use in such plants or facilities [Category VI(e)]
- Any article, material, equipment or device which is specifically designed or modified for use in the design, development, or fabrication of nuclear weapons or nuclear explosive devices [Category XVI(a)]
- Any article, material, equipment, or device which is specifically designed or modified for use in the devising, carrying out, or evaluating of nuclear weapons tests or any other nuclear explosions, except such items as are in normal commercial use for other purposes [Category XVI(b)]

Additionally, Category XII(f) on the Munitions List includes energy conversion devices for producing electrical energy from nuclear, thermal, or solar energy, or from chemical reactions which are specifically designed or modified for military application

Category XIV includes, in paragraphs d) and e),

- Nuclear radiation detection and measuring devices, manufactured to military specification, and
- Components, parts, accessories, attachments, and associated equipment specifically designed or modified for those devices

The items in Categories XII and XIV are not eligible for exemption from the provisions of the ITAR as are the items in Categories VI(e) and XVI

Under 22 CFR Part 123, titled "Licences for the Export of Defence Articles", the export of any article on the United Munitions List requires a licence from the Office of Munitions Control prior to the export unless a specific regulatory exemption applies. Such an exemption for equipment in Category VI(e) and Category XVI is contained in 22 CFR Section 123.21, which excepts equipment in such categories to the extent that it is under the export control of the Department of Energy or the Nuclear Regulatory Commission pursuant to the Atomic Energy Act of 1954, as amended, and the Nuclear Non-Proliferation Act of 1978.

Further, 22 CFR Part 125, titled "Licences for the Export of Technical Data and Classified Defence Articles", also provides that the provisions of the ITAR do not apply to technical data related to articles in Category VI(e) and Category XVI, because they are controlled by the Department of Energy and the NRC under the Atomic Energy Act of 1954, as amended and the Nuclear Non-Proliferation Act of 1978.

4 Omnibus Diplomatic Security and Antiterrorism Act (Antiterrorism Act)

The Antiterrorism Act, in addition to the provisions described supra, contains other provisions pertaining to nuclear exports. Section 601 directs the President to 1) seek universal adherence to the Convention on the Physical Protection of Nuclear Material, 2) conduct a review to determine whether the recommendations on Physical Protection of Nuclear Material published by the International Atomic Energy Agency [INFCIRC/225/Rev. 2] are adequate to deter theft, sabotage, and the use of nuclear facilities and materials in acts of international terrorism, and 3) transmit the results of this review to the Director General of the IAEA.

The President is also directed to take, in concert with United States allies and other countries, such steps as may be necessary a) to keep to a minimum the amount of weapons-grade nuclear material in international transit and b) to ensure that when any such material is transported internationally, it is under the most effective means for adequately protecting it from acts or attempted acts of sabotage or theft by terrorist groups or nations. Agreement must be sought in the United Nations Security Council to establish an effective regime of international sanctions against any nation or subnational group which conducts or sponsors acts of international nuclear terrorism, as well as measures for co-ordinating responses to all acts of international nuclear terrorism, including measures for the recovery of stolen nuclear material and the clean-up of nuclear releases.

Federal Government agencies were specifically assigned tasks by the Antiterrorism Act. Section 604 required the Secretaries of Energy, Defence, and State, the Director of the Arms Control and Disarmament Agency, and the Nuclear Regulatory Commission to review the adequacy of the physical security standards currently applicable with respect to the shipment and storage (outside the United States) of plutonium and uranium enriched to more than 20 per cent in the isotope 233 or the isotope 235, which are subject to United States prior consent rights with special attention to protection against risks of seizure or other terrorist acts. The agencies were required to each submit a written report to the Committee on Foreign Affairs of the House of Representatives and the Committee on Foreign Relations of the Senate.

setting forth the results of the review conducted pursuant to this section, together with appropriate recommendations

5 Exports of Facilities and Materials to Iran and Iraq

On 5th November 1990, the Iraq Sanctions Act of 1990 (Public Law 101-513, Secs 586-586J) was enacted That Act prohibited NRC from issuing any licence or authorization under the Atomic Energy Act of 1954 for the export to Iraq of any source or special nuclear material, production or utilization facility, sensitive nuclear technology, component, item or substance determined to have significance for nuclear explosive purposes pursuant to Section 109b of the Atomic Energy Act or any other material or technology requiring such a licence or authorization The Iraq Sanctions Act also provided that the authority of DOE under Sections 54, 64 and 82 of the Atomic Energy Act of 1954 may not be used to distribute any special nuclear material, source material, or byproduct material to Iraq The Secretary of Energy is enjoined from providing a specific authorization under Section 57b (2) of the Atomic Energy Act for any activity that would constitute directly or indirectly engaging in production of special nuclear material in Iraq

By that statute, the Commerce Department is required to use its authority under the Export Administration Act of 1979 (50 USC App 2403, 2404 and 2405) to prohibit the export to Iraq of goods or technologies listed in those sections (The sections include commodities subject to export controls for foreign policy or national security purposes, and are the bases for the Commerce Department's Commodity Control List in 15 CFR Part 799 1)

Section 586 H authorizes the President to waive any of the above-described sanctions if he certifies to the Congress that the government of Iraq has made specific fundamental changes in its policies with respect to, among other things, development and use of ballistic missiles, chemical, biological or nuclear weapons or components of such weapons, support for international terrorism, compliance with its obligations under international law, including the U N Charter, the International Covenant on Civil and Political Rights and on Economic, Social and Cultural Rights, the Genocide Convention, the Protocol for Prohibition of Use in War of Asphyxiating, Poisonous or Other Gases and of Bacteriological Methods of Warfare, the NPT and the Convention on the Prohibition of the Development Production and Stockpiling of Bacteriological, Biological and Toxin Weapons The President must also determine that it is essential to the national interests of the United States to exercise the authority

Title XVI of the National Defence Authorization Act for Fiscal Year 1993, Public Law 102-484, enacted 23rd October 1992, requires the President to apply sanctions and controls with respect to Iran, Iraq and those nations and persons who assist them in acquiring weapons of mass destruction in accordance with the Foreign Assistance Act of 1961, the Chemical and Biological Weapons Control and Warfare Elimination Act of 1991, chapter 7 of the Arms Export Control Act, and other relevant statutes, regarding the non-proliferation of weapons of mass destruction and the means of their delivery

Section 1603 provides that the sanctions against Iraq specified in paragraphs (1) through (4) of Section 586 G(a) of the Iraq Sanctions Act of 1990 (as contained in Public Law 101-513), including denial of export licences for United States persons and prohibitions on United States Government sales, shall be applied to the same extent and in the same manner with respect to Iran

The sanctions authorized include those in Section 129 of the Atomic Energy Act described in 1(c), supra

6 Import of Nuclear Facilities and Materials

The NRC has authority, under Sections 103 and 104 of the Atomic Energy Act, to issue licences for the import of utilization or production facilities. The NRC is also authorized to issue licenses for the import of special nuclear material, source material and by-product material (Sections 53, 62, 81). Unlike the export of such items, the statutory criteria for import under 10 CFR Part 110 include "no unreasonable risk to the public health and safety" as well as "not inimical to the common defence and security."

The Nuclear Non-Proliferation Act does not apply to nuclear imports and no consultation with other agencies is required.

For nuclear material imports, NRC regulations 10 CFR Part 110 provide a general licence to any person to import by-product, source or special nuclear material other than 100 kilograms or more of irradiated fuel, if the consignee is authorized to possess the material under a) a contract with the Department of Energy or b) an exemption from licensing requirements issued by the Commission or a general or specific licence issued by the Commission or an Agreement State.¹³ Importers of special nuclear material under this general licence must provide advance notification of imports to the Commission as specified in Part 73, discussed infra. An environmental impact statement is required for import of spent power reactor fuel (10 CFR Part 51, Section 51.22(c)(15)).

If a hearing is requested in an import licensing proceeding by a person whose interest may be affected and the request is granted, the Commission will consider, as provided in 10 CFR 110.84(b), the nature of the alleged interest, how that interest will be affected by the proceeding, and the possible effect of any order on that interest, including, whether the relief requested is within the Commission's authority, and if so, whether granting relief would redress the alleged injury. As in the case of export licensing proceedings, the licensing decision will be based on all relevant information, including information which might go beyond that in the hearing record.

7 Energy Policy Act

The Energy Policy Act of 1992, Public Law 102-496, 24th October 1992, imposed requirements for owners or operators of any civilian power reactor to report to the Secretary of Energy by 1st January each year, (1) the country of origin and seller of any natural or enriched uranium purchased or imported into the United States by the owner or operator and (2) the country of origin and the seller of any enrichment services purchased by him, all such information to be made available to the Congress by 1st March of each year (Title X, Section 1015)

As a related measure to encourage revitalization of the U S uranium industry, the Secretary of Energy is required to encourage states of the United States and utility regulatory authorities, i e , public service commissions, to take into account, among other things, the national need to avoid dependence on imports when considering whether to allow an owner or operator of an electric power plant to recover in its rate base cost of domestic uranium or enrichment services from a seller greater than the cost of foreign uranium or enrichment services (Title X, Section 1017)

The Energy Policy Act of 1992 also authorized the newly formed United States Enrichment Corporation to negotiate the purchase of all highly enriched uranium made available by any State of the former Soviet Union under a government-to-government agreement to assume the obligation of the Department of Energy under any contractual agreement that has been reached with any such State or any private entity before the transition date. The Corporation may only purchase this material so long as the quality of the material can be made suitable for use in commercial reactors (Title II, Section 1408)

The Corporation must prepare an assessment of the potential use of highly enriched uranium in the business operations of the Corporation. In addition, if in the event that the agreement provides for the Corporation to provide for the blending and conversion, the assessment must include a plan for such blending and conversion. It must also determine the least-cost approach to providing blending and conversion services, compatible with environmental safety, security and non-proliferation requirements and include a competitive process to be used for selecting a provider of such services, including the public solicitation of proposals from the private sector, to allow a determination of the least-cost approach.

The Energy Policy Act of 1992, cited supra, also amended the Atomic Energy Act to create the United States Enrichment Corporation as an agency of the United States Government (Sections 901-904, Title IX). Under Section 1303(4), the Corporation is directed to enrich uranium, provide for uranium to be enriched by others, or acquire enriched uranium, including low-enriched uranium derived from highly enriched uranium purchased from a State of the former Soviet Union.

Section 1403(c) excludes from transfer of DOE enrichment facilities, facilities for production of highly enriched uranium. Section 1608 excludes from Price-Anderson coverage. Section 170 of the AEA, any licence under Sections 53, 63 or 103 for a uranium enrichment facility constructed after 24th October 1992.

Section 1701(a) of Title XI of the Energy Policy Act of 1992 mandates that within 2 years after 24th October 1992, the NRC establish by regulation such standards as are necessary to govern the gaseous diffusion uranium enrichment facilities of the Department of Energy to protect the public health and safety from radiological hazards and provide for the common defence and security. Those promulgated regulations will require that adequate safeguards, within the meaning of Section 147 of the AEA are in place.

Section 1701(b)(1) and (2) require that the NRC, in consultation with the DOE and the Environmental Protection Agency (EPA), report annually to Congress on the status of health, safety, and environmental conditions at the DOE gaseous diffusion uranium enrichment facilities of the DOE and whether these facilities are in compliance with the NRC standards and other applicable laws.

Section 1701(c)(1)-(4) provides for an NRC certification process to ensure that the Corporation complies with standards the NRC has established. The Corporation must apply annually for a certificate of compliance to the NRC, which in consultation with the EPA, must determine whether there has been compliance with the NRC standards. Pursuant to subsection (d), the Department's gaseous diffusion uranium enrichment facilities may not be operated by the Corporation unless the NRC, with consultation of the EPA makes a determination of compliance under subsection (b) or approves a plan prepared by the DOE for achieving compliance required under subsection (b).

As to licensing of other technologies, Section 1702(a) and (b) provides that Corporation facilities using alternative technologies for uranium enrichment, other than atomic vapour laser isotope separation (AVLIS), will be licensed under Sections 53 and 63. Section 1703 provides that the Corporation will be subject to the AEA with regard to the use of, or access to Restricted Data to the same extent as any private corporation.

Section 1608 provides that the Price-Anderson Act (Section 170, AEA) shall not apply to any licence under Sections 53, 63 or 103 for a uranium enrichment facility constructed after 24th October 1992.

Section 1015 outlines a schedule and process for annual uranium purchase reports. Each 1st January, the owner or operator of any civilian nuclear power reactor must report to the Secretary of Energy, acting through the Administrator of the Energy Information Administration, with respect to the previous fiscal year (1) the country of origin and the seller of any uranium or enriched uranium purchased or imported in the U.S. either directly or indirectly by such owner or operator, and (2) the country of origin and the seller of any enrichment services purchased by such owner or operator. This information must be made available to Congress by 1st March every year.

8 Nuclear Waste Policy Act

The Nuclear Waste Policy Act of 1982 (NWPA), Public Law 97-425, was amended by the Nuclear Waste Policy Amendments Act, Public Law 100-203. Section 9 of the Amendments Act provides that nothing in the NWPA should be construed to affect Federal, State, or local laws pertaining to the transportation of spent nuclear fuel or high-level radioactive waste (42 U S C Section 10108). Thus, the amendments to the NWPA made few changes to existing transportation requirements as they concern spent fuel and high-level radioactive waste.

Section 137(a) of the NWPA requires that transportation of spent nuclear fuel under Section 136(a) is subject to licensing and regulation by the Commission and by the Secretary of Transportation as provided for under existing transportation law (42 U S C Section 10157).

Section 2901 of the Energy Policy Act of 1992 amended the AEA by adding a new section which provides for state authority to regulate radiation below the level of regulatory concern of the NRC. Section 276 provides in subsection (a), that no provision of the AEA, or of the Low-Level Radioactive Waste Policy Act, may be construed to prohibit or otherwise restrict the authority of any state to regulate, on the basis of radiological hazard, the disposal or off-site incineration of low-level radioactive waste, if the NRC, after 24th October 1992 exempts such waste from regulation. Subsection (b) provides that nothing in Section 276 may be construed to imply preemption of existing state authority. Except as provided above, no State has any additional authority to regulate activities licensed by the NRC.

9 Transportation

In 1975, the so-called Scheuer amendment was adopted as part of the NRC appropriations legislation, Public Law 94-79. The amendment prohibited NRC from licensing any air shipments of plutonium in any form, whether exports, imports or domestic shipments, except plutonium in a medical device for individual human application. The prohibition was to apply until NRC certified to a Congressional committee that a safe container had been developed and tested that would not rupture under crash and blast-testing equivalent to the crash and explosion of a high-flying aircraft. The NRC subsequently incorporated this statutory requirement in its regulation 10 CFR Part 71 and has certified two containers, PAT-1 and PAT-2.

In 1987, Congress added, in Section 5062 of Title V of the Omnibus Budget Reconciliation Act of 1987, provisions requiring that the NRC certify to Congress that a container used in transportation of plutonium by air through U S airspace from one foreign location to another is safe. That Section, the so-called Murkowski Amendment, required as a basis for the certification of the container, (a) an actual drop test of the containers from maximum cruise altitude, (b) an actual crash test of a cargo aircraft fully loaded with containers, to actual worst case transportation conditions to the maximum extent practicable,

unless the Commission determines, after consultation with an independent scientific review panel, that the stresses produced on the container by other tests used in developing the container exceed the stresses which would occur during a worst case plutonium air shipment accident, and (c) Commission evaluation of the container certification under the National Environmental Policy Act (NEPA), and compliance with other applicable laws, including the Scheuer Amendment. No container has yet been certified under the Murkowski Amendment.

The Energy Policy Act of 1992 added a provision pertaining to safety of shipments of plutonium by sea, reflecting concerns of U S coastal states and territories with the return of plutonium derived from U S supplied uranium from France, after reprocessing, back to Japan. The new provision, Section 2904 of Title XXIX, requires the President, in consultation with the Nuclear Regulatory Commission, to conduct a study on the safety of shipments of plutonium by sea. The study must consider the following:

- 1) the safety of the casks containing the plutonium,
- 2) the safety risks to the states of such shipments,
- 3) upon the request of any state, commonwealth, territory or possession of the United States, the adequacy of its emergency plans with respect to such shipments, and
- 4) the federal resources needed to assist the states, commonwealth, territory or possession of the United States on account of such shipments.

The Hazardous Materials Transportation Act, 49 U S C Section 1801, et seq, applies to the regulatory responsibilities of the NRC with respect to transportation of radioactive materials and, accordingly, affects NRC licensees. The Hazardous Materials Transportation Uniform Safety Act of 1990 (HMTUSA), Public Law 101-615, was enacted on 16th November 1990 and revised many sections of the Hazardous Materials Transportation Act (HMTA). The HMTA requires the Secretary of Transportation to issue regulations for the safe transportation of hazardous materials in intrastate, interstate, and foreign commerce. Regulations issued thereunder are applicable to any person who transports, ships, causes to be transported or shipped, or who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a package or container which is represented, marked, certified or sold by such person as qualified for use in the transportation in commerce of hazardous materials. (42 U S C Section 1804)

Section 116(a) of the HMTA, as amended, required the Secretary of Transportation to "amend existing regulations as the Secretary deems appropriate to provide for the safe transportation by rail of high-level radioactive waste and spent nuclear fuel by various methods of rail transportation, including by dedicated train" (49 USC Section 1812)

Section 116(d) "Inspections of Vehicles Transporting Highway Route Controlled Quantity Radioactive Materials," required the Secretary to issue regulations "before each use of a motor vehicle to transport in commerce any highway route controlled quantity radioactive material"

the vehicle must be "inspected and certified to be in compliance with this title and applicable Federal motor carrier safety laws and regulations " (49 USC Section 1812)

Section 16 of the Waste Isolation Pilot Plant Land Withdrawal Act, Public Law 102-579, enacted on 30th October 1992 applies to shipping containers carrying transuranic waste by or for the Secretary of Energy to or from the Waste Isolation Pilot Plant (WIPP) It provides that such waste cannot be transported except in packages where design must be certified by the NRC and that have been determined by the NRC to satisfy its quality assurance requirements The Secretary is to provide advance notification to states and Indian tribes through whose jurisdiction the transuranic waste is being transported to or from the WIPP

Notes and References

- 1 Public Law 83-703, 83rd Congress, 2nd Session, 68 Stat 919, 42 USC 2011-2284
- 2 Sections 102-104
- 3 Public Law 93-438, 88 Stat 1233, 42 USC 5801-5891, Sections 104(a), 201 The NRC is an independent regulatory agency with five Commissioners of whom no more than three may be members of the same political party They are appointed by the President with the consent of the Senate for a five-year period The NRC structure consists of several offices, some established by the Energy Reorganization Act and some set up through internal organization decisions
- 4 Public Law 95-91, 91 Stat 565, 42 U S C 7151, Section 301(a)
- 5 The following laws and regulations govern nuclear trade Atomic Energy Act of 1954, as amended, Code of Federal Regulations (CFR), Nuclear Non-Proliferation Act of 1978, Export Administration Act, Arms Export Control Act, Energy Policy Act of 1992
- 6 However, following the Indian explosion of a nuclear device in 1974, detailed findings were in fact made for nuclear exports, pursuant to procedures required by Executive Order 11902
- 7 An extensive discussion of this statute is found in Bettauer, *The Nuclear Non-Proliferation Act of 1978* 10 Law and Policy in International Business 1105-80 (1978)
- 8 A subsequently enacted statute limited the NRC's export licensing authority over depleted uranium Depleted uranium incorporated in defence articles or commodities solely to take advantage of high density or pyrophoric characteristics unrelated to radioactivity is now exempt from NRC jurisdiction when subject to the controls of the State Department and the Commerce Department under the Arms Export Control Act or the Export Administration Act (Section 110 of the International Security and Development Co-operation Act of 1980, Public Law 96-553, 22 USC 2778a)

- 9 A group of countries supplying nuclear material and equipment, the so-called London Club
- 10 The Procedures Established Pursuant to the Nuclear Non-Proliferation Act of 1978 by the Departments of State, Energy and Commerce, as amended on 16th May 1984 (49 Fed Reg 20780) do, however, provide (Section 17 b) that when a proposed export requires approval for enrichment pursuant to Section 402(a) and the proposed export for enrichment is licensed by the NRC the Secretary of Energy, with the concurrence of the Secretary of State and having consulted with the Director of the Arms Control and Disarmament Agency (ACDA) the NRC and the Secretary of Defence, hereby approves such enrichment
- 11 Sections 53, 57, 69, 81 103, 104
- 12 The NRC's interpretation of these two statutes in this regard was upheld by the United States Court of Appeals for the District of Columbia Circuit in *National Resources Defence Council v Nuclear Regulatory Commission*, 647 F R 1345 (1981)
- 13 Section 274 of the Atomic Energy Act authorises the NRC to enter into agreement with the Governor of any State to discontinue the Commission's regulatory authority with respect to by product materials, source materials and special nuclear materials in quantities not sufficient to form a critical mass, and for the State to regulate such materials within the State for the protection of public health and safety from radiation hazards These States are known as "Agreement States" States which have not entered into an agreement with the NRC or its predecessor, the Atomic Energy Commission, are known as "Non-Agreement States"

Annex I

LIST OF AGREEMENTS FOR PEACEFUL NUCLEAR COOPERATION
CONCLUDED BY THE UNITED STATES

Agreement	Date Signed	Effective Date	Termination Date	Citation
Argentina	June 25, 1969	July 25, 1969	July 24, 1999	TIAS No 6721, 20 UST 2587
Australia	July 5, 1979	January 16, 1981	January 15, 2011	TIAS No 9893, - UST -
Austria	July 11, 1969	January 24, 1970	-	TIAS No 6815, 21 UST 10
- amendment	July 14, 1974	October 8, 1974	January 23, 2014	TIAS No 7912, 25 UST 2337
Brazil	July 17, 1972	September 20, 1972	September 19, 2002	TIAS No 7439, 23 UST 2477
Canada	June 15, 1955	July 21, 1955	-	TIAS No 3304, 6 UST 2595
- amendment	June 26, 1956	March 4, 1957	-	TIAS No 3771, 8 UST 275
- amendment	June 11, 1960	July 14, 1960	-	TIAS No 4518, 11 UST 1780
- amendment	May 25, 1962	July 12, 1962	-	TIAS No 5102, 13 UST 1400
- amendment	April 23, 1980	July 9, 1980	January 1, 2000	TIAS No 9759, 32 UST 1079
Columbia	January 8, 1981	September 7, 1983	September 6, 2013	TIAS No 10722, - UST -
Czechoslovakia	June 18, 1991	February 13, 1992	February 13, 2022	
Egypt	June 29, 1981	December 29, 1981	December 28, 2021	TIAS No 10208, - UST -
European Atomic Energy Community (EURATOM) ^{1/2}	May 29 & June 18, 1958	August 27, 1958	-	TIAS No 4091, 9 UST 1116
- Additional Agreement ^{2/}	June 11, 1960	July 25, 1960	-	TIAS No 4650, 11 UST 2589
- amendment	May 21 & 22, 1962	July 9, 1962	-	TIAS No 5104, 13 UST 1439
- amendment	August 22 & 27, 1963	October 15, 1963	December 31, 1995	TIAS No 5444, 14 UST 1459
- amendment	September 20, 1972	February 28, 1973	-	TIAS No 7566, 24 UST 472
Finland	May 2, 1985	March 27, 1992	March 26, 2022	TIAS No 6896, 21 UST 1368
Hungary	June 18, 1991	February 13, 1992	February 13, 2022	
India	August 8, 1963	October 25, 1963	October 24, 1993	TIAS No 5446, 14 UST 1484
- waiver of certain obligations	November 30, 1982	November 30, 1982	-	TIAS No 10614, - UST -
International Atomic Energy Agency (IAEA)	May 11, 1959	August 7, 1959	-	TIAS No 4291, 10 UST 1424
- amendment	February 12, 1974	May 31, 1974	August 6, 2014	TIAS No 7852, 25 UST 1199
- amendment	January 14, 1980	May 6, 1980	-	TIAS No 9762, 32 UST 1143
Japan			minimum 30 years	
Korea	November 24, 1972	March 19, 1973	-	TIAS No 7583, 24 UST 775
- amendment	May 15, 1974	June 26, 1974	March 18, 2014	TIAS No 7842, 25 UST 1102
Morocco	May 30, 1980	May 16, 1981	May 15, 2001	TIAS No 10018, - UST -
Norway	January 12, 1984	July 2, 1984	July 1, 2014	TIAS No - , - UST - ^{1/2}
Peru	June 26, 1980	April 15, 1982	April 14, 2002	TIAS No 10300, - UST -
Philippines	June 13, 1968	July 19, 1968	July 18, 1998	TIAS No 6522, 19 UST 5389
Poland	June 18, 1991	February 13, 1992	February 13, 2022	
Portugal	May 16, 1974	June 26, 1974	June 25, 2014	TIAS No 7844, 25 UST 1125
- amendment	May 22, 1974	June 28, 1974	August 21, 2007	TIAS No 7845, 25 UST 1158

Agreement	Date Signed	Effective Date	Termination Date	Citation
South Africa	July 8, 1957	August 22, 1957	-	TIAS No 3885, 8 UST 1367
- amendment	June 12, 1962	August 23, 1962	-	TIAS No 5129, 13 UST 1812
- amendment	July 17, 1967	August 17, 1967	-	TIAS No 6312, 18 UST 1671
Spain	March 20, 1974	June 28, 1974	June 27, 2014	TIAS No 7841, 25 UST 1063
Sweden	December 19, 1983	April 11, 1984	April 10, 2014	TIAS No -, - UST - ²
Switzerland	December 30, 1965	August 8, 1966	August 7, 1996	TIAS No 6059, 17 UST 1004
- amendment	November 2, 1973	January 29, 1974	-	TIAS No 7773, 25 UST 19
Taiwan ²	April 4, 1972	June 22, 1972	-	TIAS No 7364, 23 UST 945
- amendment	March 15, 1974	June 14, 1974	June 21, 2014	TIAS No 7834, 25 UST 913
Thailand	May 14, 1974	June 27, 1974	June 26, 2014	TIAS No 7850, 25 UST 1181

¹ The members of EURATOM are Belgium, Denmark, Federal Republic of Germany, France, Greece, Italy, Ireland, Luxembourg, Netherlands, Portugal, Spain and United Kingdom

² This agreement incorporates by reference certain provisions of the expired "Joint Program" Agreement, signed November 8, 1958, TIAS No 4173, 10 UST 75, amended TIAS No 5103, 13 UST 1403. By exchange of notes of December 16 and 17, 1985, TIAS No -, - UST -, the United States and EURATOM agreed for administrative convenience that material, equipment or devices that had been subject to the Joint Program Agreement would be held subject to the Additional Agreement

³ Text of agreement available in House Document 98-164, 98th Cong, 28 Sess (January 26, 1984)

⁴ Text of agreement available in House Document 98-163, 98th Cong, 28 Sess (January 26, 1984)

⁵ On January 1, 1979, the United States recognized the Government of the People's Republic of China as the sole legal government of China. Within this context, the people of the United States maintain cultural, commercial, and other unofficial relations with the people on Taiwan. The United States acknowledges the Chinese position that there is but one China and Taiwan is a part of China. The United States does not recognize the "Republic of China" as a state or government. Pursuant to Section 6 of the Taiwan Relations Act, P L 96-8, 93 Stat 14, and Executive Order 12143, 44 F R 37191, agreements concluded with the Taiwan authorities prior to January 1, 1979, are administered on a nongovernmental basis by the American Institute in Taiwan, a non-profit District of Columbia corporation, and constitute neither recognition of the Taiwan authorities nor the continuation of any official relationship with Taiwan.

ADMINISTRATIVE DECISIONS

FINLAND

Decision in Principle on Construction of a Nuclear Power Plant (1993)

On 25 February 1993, the Council of State (the Government) took a positive view on the joint application by two power companies Imatran Voima Oy (IVO) and Teollisuuden Voima Oy (TVO) on a decision in principle on the construction of a new nuclear power plant (the two power companies already operate a nuclear power plant). The Government therefore has taken an official stand in favour of an increase in nuclear power capacity.

The Government justifies construction of an additional nuclear power plant for reasons of securing energy supply, economy and environmental protection. Studies have shown that Finland will need additional production capacity by the year 2000, and is now importing 15 per cent of its electricity. It is believed that, in future, imported electricity will no longer be available at a reasonable price.

This decision in principle is subject to parliamentary approval as Parliament has the authority to make a final decision on construction of nuclear power plants in Finland. It will either approve or reverse the decision in principle by the Government. However, it cannot change the contents of the decision or lay down any conditions for its implementation.

In Parliament, the question is submitted to the Economic Committee, which will consult experts and may request the comments of the Finance Committee and the Environment Committee. When the Economic Committee finalises its report, the question will be put before Parliament in one plenary sitting. The decision in principle requires a simple majority vote to remain in force.

The power company may apply for a construction permit only after an affirmative decision by Parliament. This permit is granted by the Government.

SWITZERLAND

Request for Authorisation of an Increase in the Nominal Thermal Power of the Leibstadt Nuclear Power Plant (1992)

On 31 July 1992, the Leibstadt nuclear power plant (CNL) submitted to the Swiss Federal Council a request for an increase in its nominal thermal power. The current nominal thermal power is 3138 MW, while the requested power is 3600 MW.

In accordance with legal requirements a safety report was submitted along with the request. Both documents were reviewed at a public inquiry held from 8 September to 7 December 1992. 5460 individuals, 29 organisations and associations and 10 communities opposed the request. 20% of the objections came from Germany and a small number from Austria. 98% of them were multiple copies of the same text. The objections were sent for assessment to the CNL.

The Principal Nuclear Safety Division of the Federal Energy Office and the Federal Commission for the Safety of Nuclear Installations are analysing the substance of the request and the objections. Their opinions will serve as the basis of another public enquiry, to be held probably during the second half of 1994.

Extension of Mühleberg Nuclear Power Plant Operating Licence for a Limited Time, with an Increase in Nominal Thermal Power (1992)

On 14 December 1992 the Swiss Federal Council decided to extend the operating licence of the Mühleberg nuclear power plant until 31 December 2002 and to authorise an increase of 10% in the nominal thermal power from 997 to 1097 MW.

For its part, the Principal Nuclear Safety Division of the Federal Energy Office concluded that the operator had taken the necessary measures to protect life and health and that there were no indications contrary to the continuation of operations. The Federal Commission for the Safety of Nuclear Installations has evaluated positively the past conduct of operations and the current safety level of the installation. It found no reason to oppose the operation of the plant.

The Federal Council considered acceptable the slight rise in heat that the increase in power would cause to the river Aar, whose waters are used to cool the installation.

Accompanying the decision of the government are a number of conditions, including the obligation to present alternatives in the expectation of an eventual non-renewal of the operating licence at its termination date of 31 December 2002.

NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

ARGENTINA

ORGANISATION AND STRUCTURE

Creation of a Commission in the ambit of the General Secretariat of the Presidency (1992)

By Decree 1373/92 dated 5 August 1992, the President of Argentina set up an Honorary Commission in the ambit of the General Secretariat of the Presidency (published in the Boletín Oficial de la República Argentina of 12 August 1992)

The Commission was set up to help to enhance the production and application services of the National Atomic Energy Commission (CNEA) in the area of radioisotopes and radiation and develop the capacity of its resources

The Commission will be responsible for elaborating and proposing draft legislation with the aim of restructuring those services to make them more efficient. The Commission includes a representative of the General Secretariat and of the CNEA.

REGIME OF RADIOACTIVE MATERIALS

Resolution on basic rules for the physical protection of nuclear materials and installations (1992)

The above Resolution No 97/92 of the Commission was approved on 13 August 1992. It is reproduced in the CNEA Boletín Administrativo Público No 46 of 26 August 1992.

CNEA is the authority responsible for implementing the Rules.

Physical protection measures apply to "protected" material and "significant" installations. Protected material means uranium 233, uranium 235, plutonium 239, plutonium 241 and any combination thereof. Significant installation means any installation, temporary or extended storage or transport container which, in view of its radioactive content, could, through intentional acts, conceivably lead to severe radiological consequences. These consequences are specified as being the atmospheric dispersion of radioactive material due to which the most exposed member of the public is likely to receive a dose in excess of 1 millisievert (1 mSv).

The body responsible for operating an installation or dispatching or storing the material must plan, co-ordinate and implement physical protection measures in accordance with basic principles and established requirements. It must designate for the installation storage or transport of material, the person to be directly responsible for physical protection, with the approval of CNEA.

The concept of the system for physical protection must include inter alia

- the characteristics of the installation, the list of materials and equipment held including the equipment used for physical protection,
- a description of the site of the installation and any other descriptive information which will provide a better knowledge of that installation,
- the definition of the type of threat the installation might be subjected to

The system must also include measures intended to detect any intrusion, such as an alarm system with visualisation possibilities, control of access equipment to delay intrusions such as barriers, etc. A Response Task Force in support of the physical protection system is also planned and the latter must include the methods of communication with that unit.

The levels of physical protection must be established for protected material taking into account its type and quantities. As regards significant installations, those levels must take account of their characteristics, siting and the results of an evaluation made together with nuclear safety specialists. The international transport of protected material must be carried out in compliance with the recommendations, procedures and levels established by the Convention on the Physical Protection of Nuclear Material (see Nuclear Law Bulletin No 24 for text of Convention).

AUSTRIA

GENERAL LEGISLATION

Establishment of "Forum for nuclear questions" (1990)

On 30 April 1990, the Federal Chancellor issued an Order establishing, within the Office of the Chancellor, a Commission called the "Forum for nuclear questions" (BGBl No 234/1990). The Forum's task is to advise the Chancellor on all questions which relate to nuclear energy and ionizing radiation, and which require co-ordination.

The members of the Forum are to include experts, particularly in the fields of reactor technology, radiation protection, meteorology, nuclear medicine, ecology, biology, geology, energy economics, law and emergency management, as well as government officials from various Ministries.

The same Order provides for the expiry of an earlier Order (BGBl No 524/1978) establishing the Commission for Reactor Safety

RADIOACTIVE WASTE MANAGEMENT

Definition of hazardous wastes (1990/1991)

On 1 January 1990, an Order of the Federal Minister for the Environment, Youth and the Family concerning the definition of hazardous wastes (BGBl No 607/1989) came into effect. That definition includes radioactive waste, in terms of the Radiation Protection Act (BGBl No 227/1969), in a list of substances to which the Act of 1989 on the disposal of wastes applies (Altlastensanierungsgesetz BGBl No 299/1989)

Another Order by the same Minister defining hazardous wastes (BGBl No 49/1991), this time for the purposes of another (Abfallwirtschaftsgesetz, BGBl No 325/1990), came into effect on 15 February 1991

THIRD PARTY LIABILITY

Order requiring the establishment of a financial reserve for nuclear liability insurance (1991)

In October 1991, the Federal Finance Minister issued an Order (BGBl No 545/1991) requiring the establishment of a financial reserve for damage and accident insurance, including nuclear liability insurance. The Order also sets out the formulae according to which the amount of that reserve is to be calculated

REGULATIONS ON NUCLEAR TRADE

Export controls (1990)

The list of goods which may not be exported without a permit, in accordance with the Act of 1972 on security control (see Nuclear Law Bulletin No 11), was amended by an Order of 14 November 1990 (BGBl No 685/1990). The amendment includes numerous items or equipment involving radiation or radioactive materials. It came into effect on 1 December 1990

PEOPLE'S REPUBLIC OF CHINA

RADIATION PROTECTION

Radioisotope and radiation equipment radiation protection regulations (1989)*

The above Regulations were promulgated by the State Council on 24 October 1989 and entered into force on that date. The Regulations apply to any work unit or individual engaged in the sale or use of radioisotopes or radiation equipment and provide for a licensing system in their respect.

The Regulations require the approval and installation of radiation protection equipment at the same time as construction, reconstruction or modification of facilities using radioisotopes and radiation equipment. Approval and registration certificates must be obtained before use of such radioisotopes and equipment and those certificates are administered by the public health and public security departments. Where a project involves radioactive waste, documents relating to environmental impact assessments approved by the relevant environmental protection department, must be submitted with the application for approval and registration.

Work units engaged in the sale and use of radioisotopes and radiation equipment must also apply for approval and registration from province-level public health and public security departments respectively. The import of radioisotopes and radiation equipment is also subject to approval and registration. Their transport must be undertaken in compliance with the relevant transport laws and requires to be approved by the competent authorities.

Following accidents involving radiation, action must be taken to control any effects, reports must be made to the public health and public security authorities, and also to the environmental protection authorities where there might be a risk of environmental damage. The Regulations specify that the party having caused the accident must compensate the damage resulting therefrom.

Finally, the Regulations set out the responsibilities of public health, environmental and public security departments at various levels, with respect to supervision of radioisotopes and radiation equipment.

* This note has been prepared on the basis of a summary in English in "China Law and Practice", Volume 4, No. 1, published by Asia Law and Practice Ltd, GPO Box 11886, Hong Kong, Fax (852)543 7617, and is published by kind permission of the publishers and that of the editor of the "WHO International Digest of Health Legislation" where the summary also appeared [1992, 43(3)].

FRANCE

ORGANISATION AND STRUCTURE

Decrees in implementation of the Act of 1991 concerning research on radioactive waste management (1992)

In addition to Decrees on personal appointments, three Decrees in implementation of the above Act No 91-1381 of 30 December 1991 were published by 1 January 1993 (the text of the Act is reproduced in Nuclear Law Bulletin No 49) They are the following

- Decree No 92-1311 of 17 December 1992 implementing Section 6 of the Act which provides for consultations with the populations concerned by a project to construct an underground laboratory,
- Decree No 92-1366 of 29 December 1992 concerning public interest groups constituted by Section 12 of the Act,
- Decree No 92-1391 of 30 December 1992 concerning the National Radioactive Waste Management Agency (ANDRA)

The first Decree, dated 17 December 1992 (published in the Official Gazette of the French Republic of 18 December 1992), sets out the conditions for consultations with elected representatives and the population which must be held before preliminary research work is started for installing any underground laboratory project

The Decree provides for the designation of a **mediator** responsible for conducting these prior consultations and for proceeding with any such consultations with elected representatives, associations and populations concerned The mediator must describe the management of the project, the purpose of the research programme, its integration in the radioactive waste management policy Finally, he must provide information on any potential harmful effects caused by the work prior to achievement of the laboratory and the remedial actions to be undertaken

The mediator will submit to the Ministers for the Environment and for Energy a report containing all the observations made during the consultations The Decree lays down that ANDRA can begin research work prior to installing the laboratories, which include geological and geophysical studies as well as drilling, only after the mediator's report has been submitted

The second Decree, dated 29 December 1992 (published in the Official Gazette of 30 December 1992), determines the conditions for creating public interest groups which may be constituted to provide assistance and to manage equipment for installing and operating each laboratory

The third Decree, dated 30 December 1992 (published in the Official Gazette of 31 December 1992), mainly concerns the arrangement of ANDRA's administrative organisation It provides for the resources, type of management and supervision of the new public establishment, as well as for the transfer of assets, rights and obligations which tally with the tasks assigned to ANDRA That transfer will be decided by Order

The Decree also prescribes that ANDRA must, each year, submit to its Ministerial supervisory authorities a report reviewing the work achieved and to be achieved

Finally it lays down that ANDRA must submit to its Ministerial supervisory authorities, **no later than 31 December 2005**, a report analysing the results obtained together with, as the case may be, a project for an underground storage site for high-level long-lived radioactive waste

The text of the Decree of 30 December 1992 is reproduced in the "Texts" Chapter of this issue of the Bulletin

RADIATION PROTECTION

1992 Order amending a 1974 Order on the competence of persons licensed to use unsealed sources for medical purposes

This Order amends the Order of 26 March 1974 which provides that a licence to use artificial radioelements in unsealed sources may only be granted to medical doctors and to holders of a diploma, a certificate attesting studies or other certificate specified in the Order

The Order of 15 October 1992, adds some further conditions to the 1974 Order (published in the Official Gazette of 5 November 1992) Henceforth such licensees must be holders either of a diploma of additional specialised studies in nuclear medicine established by Order of 26 July 1983, or a diploma of specialised studies in nuclear medicine established by Order of 23 May 1990 as amended which sets out the list of diplomas for specialised medical studies, or a diploma of additional specialised radiopharmaceutical and radiobiological studies established by Order of 29 April 1988

TRANSPORT OF RADIOACTIVE MATERIALS

1992 Order concerning the Regulations for the transport of dangerous goods

The Order of 15 September 1992 amends certain technical data of the Order of 15 April 1945 approving the Regulations for the transport of dangerous goods by rail road and inland waterway (see Nuclear Law Bulletin No 26) This new Order was published in the Official Gazette of the French Republic of 13 October 1992

The specific provisions of the 1945 Order concerning the transport of dangerous goods by road have been repealed, with a few exceptions The provisions covering both road and other transport by land no longer apply to road transport, except for Appendix 6 which concerns flexible lead and equipment for pumping hydrocarbons

The repealed provisions have been replaced by provisions annexed to the 1992 Order and include

- Annex A concerning materials and their mode of transport,

- Annex B concerning transport equipment and transport,
- An alphabetical list of the materials

Radioactive materials are covered by the provisions in both Annexes

The new provisions entered into force on 1 January 1993

GERMANY

ORGANISATION AND STRUCTURE

First Ordinance to Amend the Ordinance on nuclear costs (1992)

The Ordinance on nuclear costs of 17 December 1981 fixes administrative fees and expenses (see Nuclear Law Bulletin No 29) It has been amended by the First Ordinance on amending the Ordinance on nuclear costs of 18 December 1992 (Bundesgesetzblatt 1992 I p 2078) The Ordinance adjusts the 1981 version of the Ordinance to the amendments of the Atomic Energy Act enacted since then

RADIATION PROTECTION

Third Act to Amend the Act on weights and measures (1992)

The Act on Weights and Measures of 22 February 1985, as last amended by Ordinance of 26 November 1986 (Bundesgesetzblatt 1985 I p 410, 1986 I p 2089) has been amended by an Act of 23 March 1992 (Bundesgesetzblatt 1992 I p 706) The consolidated version of the Act was published in Bundesgesetzblatt 1992 I p 711 According to Section 2 of that Act measuring instruments to be used in radiation protection have to be officially licensed and calibrated

REGIME OF NUCLEAR INSTALLATIONS

Ordinance on persons responsible for nuclear safety and on notification of safety related events (1992)

On 14 October 1992, the Federal Government issued an Ordinance on persons responsible for nuclear safety and on the notification of safety related events (Bundesgesetzblatt 1992 I p 1766)

The Ordinance applies to nuclear installations referred to in Section 7 paragraph 1 of the Atomic Energy Act, i.e. to installations for the production, treatment and fission of

nuclear fuel, and to installations for the reprocessing of spent nuclear fuel, with the exception of reactors with a licensed thermal nuclear power not exceeding 50 kW

The holder of a licence to operate one of the above installations (the operator) must appoint in writing a person to be responsible for nuclear safety (kerntechnischer Sicherheitsbeauftragter) This person must be reliable and have the necessary expert knowledge to comply with the requirements of the position, the appointment must be notified by the operator to the competent authority, which can require that another person be appointed if the person appointed does not meet the prerequisites

Irrespective of the operator's principal responsibility for nuclear safety the person responsible for nuclear safety must supervise and assess the measures aiming at guaranteeing nuclear safety in the installation This includes, inter alia assessing safety related events, elaborating measures to improve nuclear safety, and informing the operator on deficiencies in the nuclear safety of the installation

The operator must support the person responsible in fulfilling his tasks and, in particular, must provide the necessary personnel for his assistance The person responsible for nuclear safety must not be impeded in fulfilling his obligations, and the operator must ensure that the person responsible has access to the management of the installation at any time

The third Chapter of the Ordinance deals with the notification of incidents and other events to the competent authorities

The operator is obliged to notify accidents, incidents and other safety related events to the competent authority The criteria which constitute an event which should be notified are laid down in detail in Annexes 1 and 2 of the Ordinance which also provides for a formal notification procedure The person responsible for nuclear safety must supervise the notification by the operator to check that it is correct and complete, and must certify by his signature that he has checked the notification

The provisions relating to the obligation to appoint a person responsible for nuclear safety will enter into force on 1 July 1993, the other provisions of the Ordinance entered into force on 15 October 1992

MOROCCO

ORGANISATION AND STRUCTURE

Draft Decree setting up a National Nuclear Energy Council (1992)*

This draft Decree, revised and dated 9 March 1992, was approved by the Government in Council on 9 April 1992

* This analytical note was kindly prepared by Mr Ha-Vinh Phuong former Legal Consultant to the IAEA Technical Co-operation Programme

Under a multi-year project of technical co-operation in nuclear legislation, IAEA assistance in expert services had been provided to the Ministry of Energy and Mines of Morocco during 1983-89. As a result of such advisory services, a number of draft proposals dealing with various aspects of nuclear regulation had been drawn up, under the responsibility of the Ministry, in concert and co-operation with several other ministries as well as national and specialized institutions concerned. (A survey of the outcome of such preparatory works is to be found in the Nuclear Law Bulletin No. 50, December 1992).

The works performed took into account the following salient considerations:

An Interministerial Commission on Atomic Energy had been established by Royal Decree No. 968-65 of 13 October 1967, vested with both promotional functions and control responsibilities in regard to any public or private undertaking using nuclear techniques or involving nuclear applications. It did not, however, come to light over the years. The decree in question was finally repealed by Law No. 17-83 of 14 November 1986, which created the National Centre of Nuclear Energy, Science and Techniques (CNESTEN) as an autonomous public establishment to deal with research and development, nuclear material supply and accountancy, technical support for State control over nuclear installations and materials, and radioactive waste management.

Act No. 005-71 of 12 October 1971 provided for prior authorization or declaration in respect of any public or private undertaking involving exposure to ionizing radiation, under conditions to be specified by decree, yet the latter did not materialize for implementing purposes, more than a decade afterwards.

Planning for the introduction of nuclear power had started as early as 1977, feasibility studies for a first nuclear power plant were being carried out by the National Electricity Office since 1984, with the help of external consultants. Nonetheless, preparatory steps towards the timely adoption of a regulatory scheme for licensing, safety control, quality assurance, and environmental impact assessment were not completed.

The installation of a TRIGA research reactor for training and isotope production for local uses had long been planned, years after the acquisition of the reactor, however, no regulatory scheme had been devised with a view to proper control over such an installation in delineating operating and management functions as different from overall nuclear safety control and supervision, ahead of commissioning. (Construction of a Nuclear Research Centre for the reactor installation, to be operated by CNESTEN at Maâmora, a site located about 20 kilometers from Rabat, finally obtained Royal assent in February 1988. Nonetheless, it has been since then confronted with considerable delay for various reasons, this was mainly attributable to considerable modification of the initial plans for construction of the Centre).

It thus became apparent that there was a priority need for such a co-ordinating mechanism at the start of preparatory works in nuclear regulation as it was deemed of paramount importance to secure the views of all bodies concerned, early enough in the regulation-making process. Through joint assessment of, and concurrence of thinking to be sought on, priority areas to be regulated in the public interest, the elaboration process may be expected to be carried out smoothly. In line with this approach, on 11 September 1985 the Government approved the setting up of an Interministerial Commission on Nuclear Regulation (ICNR) as proposed by the Minister of Energy and Mines. The Commission was to be open-ended in its composition and assisted in its work.

by the Nuclear Energy Service of the Ministry for Energy and Mines (This was later followed by the establishment of another Interministerial Commission to deal with co-ordination and technical co-operation with the IAEA) As a result of five series of meetings during 1986-88, the ICNR had proved instrumental in paving the way for Morocco to become a Party to some important nuclear conventions in the subsequent years. It further gave impulse to the framing of a draft nuclear liability law on the lines of the Vienna Convention of 1963, and of two draft decrees regulating radiation protection requirements on one hand and licensing and control of nuclear installations, on the other hand, - both based on relevant international standards and current safety practices in advanced countries. The drafting of these decrees was completed on 20 November 1986 and 15 July 1987, respectively, further action was since then pending with the Secretary General of the Government, in accordance with established procedure. Moreover, in November 1989, a further draft decree regulating the transport of radioactive materials, based on the IAEA's then applicable regulations, was also completed for adoption on the IAEA's advice.

Pending such a further step, the Government in Council on 9 April 1992 approved a revised draft decree of 9 March 1992, presented by the Minister of Energy and Mines for the creation of a National Nuclear Energy Council. In this connection, it may be noted that, under the combined regulatory scheme proposed in the two earlier draft decrees regulating radiation protection and nuclear installations respectively

- a) The licensing and regulatory control of the uses of radiation sources and installations would remain vested in the Minister for Public Health, to be assisted by a National Radiological Protection Commission as established pursuant to the Radiation Protection draft decree, it would discharge its advisory functions with the technical support of an existing Central Service of Radiation Protection within the Ministry. This Service would directly account to the Minister for all its determinations and conclusions in radiation protection matters with a view to decision by the Minister.
- b) As regards nuclear installations, the corresponding functions would be discharged by the Minister responsible for Energy, on the advice of a National Nuclear Safety Commission as established by the Nuclear Installations draft decree. The Commission would be assisted in its work by a Nuclear Control Department which might be established from the Nuclear Energy Service already operating within the Ministry. The Nuclear Control Department would be in a position to report directly to the Minister all its determinations and conclusions on nuclear safety and safety related issues for decision by the Minister pursuant to the draft decree.

The main objective of establishing a National Nuclear Energy Council was twofold

- a) To provide for a decision-making body at the governmental level but restricted in its composition to those Ministers chiefly concerned with nuclear topics and implications - for convenience of policy determinations, and
- b) Through such a high-level structure within the Government - which in principle is only vested with an advisory capacity and co-ordinating functions but in fact it would act as a quasi-decision making body on behalf of the Government as a whole, on account of its composition, - to ensure effective governmental supervision and overall co-ordination of implementing steps taken at different

levels in the State administration as regards nuclear energy and connected matters

This has led to placing the Council under the Prime Minister's authority or another governmental authority designated by him to this effect, and, further, to the proviso that the Council members ex-officio - who are all Ministers in the Government - may solely be represented on the Council by the second highest official of their Department, namely the Secretary-General of each Ministry involved

In the discharge of its functions, the Council will necessarily have to rely upon subsidiary bodies in three main areas - co-ordination of nuclear activities, nuclear regulation, and international co-operation. To this end, three Commissions will advise and assist the Council in those subject-areas. The functional link among them as well as between them and the Council will be provided by the Ministry responsible for Energy - the Minister himself or his designated representative will preside over the proceedings of each Commission, and Secretariat duties for the Council will be performed by the Directorate for Energy of his own Ministry. This operational scheme should facilitate preparatory works for, and close co-ordination of, the tasks to be carried out - from the Council downwards to each respective Commission as regards directions for prospective actions, related assessment and concluding proposals as deemed appropriate and, in turn, from the Commissions upwards to the Council as regards advice and recommendations for approval of works to be undertaken. Expert advice and assistance may be called upon by the Council and the Commissions from any source deemed useful, technical committees and working groups may also be set up by the Commissions for detailed investigations into, or qualified opinion on, questions of some complexity. The creation of additional Commissions within the ambit of the Council's responsibilities is left to its discretion under the draft decree establishing it.

Pursuant to the constitutional rules of Morocco, the Government meets in Council under the Prime Minister's authority but the Council of Ministers is presided over by the King himself. Thus, in the same way as for bills adopted by the National Assembly, draft decrees approved by the Government in Council further require Royal assent prior to promulgation. Accordingly, the draft decree establishing the National Nuclear Energy Council still needs Royal sanction, through the Council of Ministers, before coming into effect.

When this is done, it may be reasonably expected that the functioning of the Council and its Commissions as envisaged in the draft decree creating them will give impetus to furthering peaceful nuclear applications in Morocco, at an orderly pace. Moreover, such a major step forward in institutional matters should enhance a systematic organisation by the competent authorities, of proper protection of health, life and the environment against ionizing radiation hazards.

NORWAY

ORGANISATION AND STRUCTURE

Amendment of 1972 Act concerning nuclear energy activities (1992)

The Act of 12 May 1972 (No 28) concerning nuclear energy activities has been amended by an Act of 18 December 1992. The amendment relates to the Norwegian Nuclear Safety Authority and the National Institute of Radiation Hygiene which have now been merged into one body, the Norwegian Radiation Protection Authority. The 1992 Act entered into force on 1 January 1993.

(The text of the 1972 Act, as amended in 1985, is reproduced in the Supplement to Nuclear Law Bulletin No 41.)

PORTUGAL

RADIATION PROTECTION

Decree on radiological protection and safety in relation to uranium mining (1992)

This Decree (No 34/92 of 9 October 1992) sets out the radiation protection standards to be applied to uranium mining and related activities. It was published in the *Diário da República*, Série B No 280 of 4 December 1992.

It replaces an earlier Decree on the same subject (No 78/84) which had provided that it should be revised according to any new recommendations on radiation protection issued by the competent international organisations and bodies (see Nuclear Law Bulletin No 34). The new Decree is, accordingly, based on the more recent standards jointly issued by the World Health Organisation (WHO), the International Labour Office (ILO), the International Atomic Energy Agency (IAEA), the OECD Nuclear Energy Agency (OECD/NEA) and EURATOM following the Recommendations of the International Commission on Radiological Protection. The Decree also provides that it may again be revised to take into account any future recommendations on radiation protection by these organisations.

RUSSIAN FEDERATION

ORGANISATION AND STRUCTURE

Order on the State Committee on Nuclear and Radiological Safety (1991)

The Nuclear Law Bulletin reported on the above Committee (Gosatomnadzor) in June 1992 (No 49), reproducing the salient points of a Declaration on its orientation and mentioning an Order of 31 December 1991

This Order No 137-rp on the Gosatomnadzor, issued by the President, sets out the Committee's duties and responsibilities, namely preparing and implementing regulations on the safe production of nuclear energy, nuclear materials, radioactive substances for peaceful and defence purposes and on State surveillance of such activities. The Order was published in the Parliament and Supreme Soviet Gazette of 20 August 1992, No 33 (Vedomosti S"ezda narodnyh deputatov Rossijskoj Federacii i Verhovnogo Soveta Rossijskoj Federacii)

SWEDEN

ORGANISATION AND STRUCTURE

Transfer of the duties of the National Board for Spent Nuclear Fuel to SKI (1992)

The purpose of the National Board for Spent Nuclear Fuel (SKN) was to review, regulate and oversee the activities of nuclear installations in the field of spent fuel and radioactive waste management. On 1 July 1992, the duties of SKN were transferred to the Swedish Nuclear Power Inspectorate (SKI) and the Board was abolished.

The Ordinance of 2 June 1988 on instructions for SKI (SFS 1988 523) (see Nuclear Law Bulletin No 44) was amended to provide for the changes.

UNITED STATES

GENERAL LEGISLATION

Energy Policy Act (1992)

The President signed Public Law 102-496, the Energy Policy Act of 1992, into law on 24 October 1992. The provisions affecting the Nuclear Regulatory Commission are as follows.

A Nuclear Plant Licensing

Title XXVIII of the Energy Policy Act affects major portions of the Nuclear Regulatory Commission's (NRC) Part 52, giving the Commission additional flexibility and authority regarding the timing and format of post-construction hearings on combined licences

Section 2801 amends Section 185 of the Atomic Energy Act (AEA) to give the NRC specific authority to issue a combined construction permit and operating licence after a single public hearing. The provision requires that the Commission identify within the combined licence the inspections, tests and analyses that the licensee must perform, including those related to emergency planning, and the acceptance criteria that if met will provide reasonable assurance that the plant has been constructed and will operate in conformity with the licence, the Atomic Energy Act (AEA) and the Commission's rules and regulations. The NRC must ensure that the prescribed inspections, tests and analyses have been performed and, prior to operation, must find that the acceptance criteria have been met. No findings are required, except that the NRC must publish notice in the Federal Register at least 180 days before a plant is scheduled to begin operation, allowing the public 60 days to request a hearing. The request must show prima facie that one or more of the acceptance criteria have not been met and that the specific operational consequences of non-conformity would be contrary to providing reasonable assurance of adequate protection of the public health and safety. If NRC grants a hearing, it must determine whether there is sufficient reasonable assurance of adequate protection of the public health and safety to allow interim operation during the pendency of the hearing and, if NRC finds that reasonable assurance exists, it must allow interim operation. For any post-construction hearing, the Commission may use either formal or informal procedures but must state its reasons for choosing either type of procedure. The NRC is required "to the maximum possible extent" to reach a decision within 180 days of either publication of the Federal Register notice or the anticipated fuel loading date whichever is later.

Section 2804 amends Section 189a (2) of the AEA to permit the NRC to make an amendment to a combined construction and operating licence immediately effective despite the pendency of a hearing request if the NRC determines that the amendment involves no significant hazards consideration. A final order allowing or prohibiting a facility to begin operating under a combined licence is subject to judicial review pursuant to amended Section 189 b (Energy Policy Act, Section 2805).

The provisions of the Energy Policy Act are applicable to all proceedings involving a combined licence for which an application was filed after 8 May 1991 (Section 2806).

B Uranium Enrichment

Title IX of the Act adds to a new Title II to the AEA. Section 1301 of the revised AEA and the sections that follow establish, effective 1 July 1993, a wholly-owned government corporation, the United States Enrichment Corporation. The responsibilities of the Corporation include operation of the gaseous diffusion enrichment facilities and development of the Atomic Vapor Laser Isotope Separation (AVLIS) technology or other enrichment technologies. It is also authorized to purchase highly-enriched uranium (HEU) from the States of the former Soviet Union for the purposes of converting the material to Low-Enriched Uranium (LEU) fuel for use in commercial reactors (see note on US/Russian Federation Agreement in the "Agreements" Chapter of this issue of the Bulletin).

The Corporation will be headed by a five-person Board of Directors who will serve staggered five-year terms. Each will be appointed by the President and confirmed by the Senate. The members will serve part-time and must meet at least quarterly. The President may also appoint the Secretary of the Treasury or his designee as the sixth member of the Board, or such individual may serve as a non-voting ex officio member.

The Department of Energy (DOE) will be responsible for the operation of the uranium enrichment facilities until 1 July 1993 and is directed to assist the Transition Manager (an individual functioning in the period between enactment of Title IX and 1 July 1993) in preparing for the transfer of the uranium enrichment enterprise to the Corporation.

The Corporation is authorized to negotiate the purchase of all HEU made available by any State of the former Soviet Union under a government-to-government agreement or assume the obligations of DOE under any prior agreement that had been reached with such State or any private entity before 1 July 1993. The Corporation may only purchase such materials if the quality of the material is suitable for use in commercial reactors.

In the event that any such agreement calls for the Corporation to provide for the blending and conversion of HEU, the Corporation's assessment shall include a plan for such activities. The plan must include a competitive process for selecting a provider of such services. The Corporation is also directed to minimize the impact on the domestic nuclear industry from the sale of low-enriched uranium derived from HEU.

Because the Corporation will be a "person" under Section 11s of the AEA, the Corporation and its contractors are required to have NRC licences unless Congress explicitly provides otherwise (as it has done for the gaseous diffusion facilities). Nothing in the Energy Policy Act exempts any activity performed related to the conversion of HEU from the former Soviet Union by the Corporation or its contractors from NRC licensing requirements.

Existing gaseous diffusion plants

The Corporation would be absolved from decommissioning costs associated with environmental conditions identified by the Environmental Protection Agency (EPA) at the existing plants at Paducah, Kentucky and Portsmouth, Ohio. The gaseous diffusion facilities will remain covered by the Price-Anderson Act.

Section 1701 of the Energy Policy Act provides that by 24 October 1994, the NRC must promulgate standards governing the gaseous diffusion plants to protect the public health and safety from radiological hazards and provide for the common defence and security. These standards must require that adequate safeguards are in place.

The NRC, in consultation with EPA must provide a report to Congress at least once each year on the status of health, safety, and environmental conditions at the gaseous diffusion facilities. This report must include a determination whether the facilities are in compliance with the applicable NRC regulations and all applicable laws.

The legislation directs the NRC to establish a certification process to ensure that the Corporation complies with NRC standards. The Corporation is required at least once a year to apply to the Commission for a certificate of compliance. The NRC, in consultation with

EPA, shall review the application and based on that review, determine whether the facilities are in compliance with the applicable NRC regulations. This requirement for a certification is in lieu of any requirement for a licence

The legislation requires the Corporation and its contractors to provide to the NRC and EPA ready access, as those agencies deem necessary, to the Corporation's facilities personnel, and information

The Corporation may not operate the facilities unless the NRC determines that the facilities are in compliance with NRC regulations or approves a plan prepared by DOE for achieving such compliance

The NRC has authority under Section 111 of the AEA to licence exports of enriched uranium processed at the Corporation's facilities. The NRC has licensed all exports from the gaseous diffusion facilities operated by DOE, except for small quantities of special nuclear material which were occasionally exported on a government-to-government basis

It is not clear in the Energy Policy Act as to when the NRC is to assume regulatory jurisdiction over the gaseous diffusion facilities. It appears that under new Section 1314(d) of the AEA, DOE's responsibility for the management and operation of the gaseous diffusion facilities terminates on the day the Corporation comes into existence. There is no mention in the statutory provision that addresses DOE "oversight" of the facilities after the Corporation takes over the managerial and operational responsibilities. However, the Corporation may not operate the facility unless the NRC determines that the facility is in compliance with NRC standards or has approved a DOE plan for placing the facilities in compliance. The question is whether the legislation can be read to provide for DOE oversight of the facilities and deferral of NRC certification determinations until NRC has promulgated its standards. Some relevant legislative history (a statement by Congressman Rhodes) suggested that during the two-year period before NRC establishes safety standards, "it is intended that the facilities be operated by the newly created Corporation under DOE oversight." 138 Cong. Rec. E2089 (9 October 1992)

Another question relates to NRC's responsibilities under the National Environmental Protection Act (NEPA) regarding the regulation of the gaseous diffusion facilities. NRC staff is examining whether NRC is required to prepare an environmental impact statement or an environmental assessment as part of the process of formulating standards and/or making its annual certification determinations. Congress did not provide any guidance on the nature of NRC's NEPA responsibilities

A third question relates to whether the NRC certification process may include enforcement mechanisms, such as issuance of orders and civil penalties, in addition to refusal to certify. NRC staff's preliminary analysis concludes that Section 1312(b) of the legislation confers upon NRC the authority to impose the full range of sanctions under the Atomic Energy Act

Atomic Vapor Laser Isotope Separation

Section 1601 directs the Corporation to prepare an assessment of the economic viability of proceeding with the commercialization of Atomic Vapor Laser Isotope Separation technology (AVLIS) and alternative technologies for enrichment. If, on the basis

of that report, the Corporation decides that the commercialization of AVLIS or alternative technologies should proceed, it will have the exclusive right to deploy and use any AVLIS plants, processes, and technical information owned or controlled by the Federal Government, upon completion of a royalty agreement with DOE. If requested by the Corporation, the President will transfer to the Corporation all rights, titles, or interests in property (including equipment) owned by the Federal Government which is directly related to development of AVLIS or alternative technologies.

To develop AVLIS or alternative technologies, the Corporation may provide for the establishment of a private for-profit corporation which would have as its initial purpose the construction of the enrichment facility. This private corporation would not be an agency or instrumentality of the United States. The private corporation would be responsible for raising all funds through the issuance of stock or bonds to pay for the construction of the facility. The United States Enrichment Corporation would only be authorized to pay for certain predeployment costs (which are defined to exclude actual construction costs), provided the payments do not exceed \$364 million. The Corporation may enter into a contract with the private corporation under which the Enrichment Corporation would purchase the enriched uranium produced by the private corporation. The Corporation would be responsible for all costs associated with the decontamination and decommissioning of any facility that it constructs.

Under the Energy Policy Act, the NRC would be responsible for licensing AVLIS or any other new enrichment facility. AVLIS would be licensed using the two-step licensing process required for a production facility under Section 189 of the AEA, any other Corporation enrichment facility could be licensed under Sections 53 and 63 of the AEA. The legislation authorizes the Corporation, if it decides to proceed with commercialization of AVLIS or an alternative technology, to complete preapplication activities with the NRC.

Any new enrichment facility other than a gaseous diffusion plant constructed by the Corporation would not be covered by the Price-Anderson Act.

The legislation makes clear that the Corporation's pre-application activities cannot be completed until the Corporation has prepared its assessment of the viability of AVLIS. The NRC intends to develop regulations governing the licensing of AVLIS.

C High-Level Radioactive Waste - (Environmental Standards for Yucca Mountain)

Section 801 of Title VIII of the Energy Policy Act provides that within 90 days after the enactment of the legislation, EPA will enter into a contract with the National Academy of Sciences (NAS) under which NAS will provide findings and recommendations to EPA by 31 December 1993 on enumerated issues relating to environmental standards governing the Yucca Mountain repository. Specifically, the NAS will address (1) whether a health-based standard based upon doses to individual members of the public from release to the accessible environment will provide reasonable standards for protection of the public health and safety of the general public, (2) whether it is reasonable to assume that a system for post-closure oversight of the repository can be developed, based upon active institutional controls, that will prevent an unreasonable risk of breaching the repository's engineered or geological barriers or increasing the exposure of individual members of the public to radiation beyond allowable limits, and (3) whether it is possible to make scientifically

supportable predictions of the probability that the repository's engineered or geological barriers will be breached as a result of human intrusion over a period of 10,000 years

Within one year after receiving the report from the NAS EPA must promulgate standards for protection of the public from releases to the accessible environment from radioactive materials stored or disposed of at Yucca Mountain. Such standards must prescribe the maximum annual effective dose equivalent to individual members of the public from releases to the accessible environment from radioactive materials stored or disposed of in the repository. The EPA standards are to be "based upon and consistent with" the findings and recommendations of the NAS. These standards are to be the only generally applicable standards applicable to Yucca Mountain.

Within one year after promulgation of the EPA standards, the NRC must promulgate a rule modifying 10 CFR Part 60 of its regulations so that it is consistent with the new EPA regulations. The Commission's regulations shall assume, to the extent consistent with the findings and recommendations of the NAS, that following repository closure the inclusion of engineered barriers and DOE post-closure oversight of the Yucca Mountain site shall be sufficient to (1) prevent any activity at the site that poses an unreasonable risk of breaching the repository's engineered or geological barriers and (2) prevent any increase in the exposure of individual members of the public to radiation beyond allowable limits.

It appears from the Congressional Conference Committee report that the NAS could properly estimate the collective dose to the general population that would result from a standard based upon doses to individual members of the public.

The Conference Committee stated that it was not intended that the NAS, in making its recommendations, establish specific standards for protection of the public. Instead, its function is to provide expert scientific guidance on the issues involved in establishing those standards. It was stated that the responsibilities for setting specific standards would reside with EPA or NRC, and that the provisions of the legislation are not intended to limit EPA's discretion in setting those standards or NRC's discretion in promulgating required regulations.

D Regulation of Low Level Waste Disposal

Section 2901 of the Energy Policy Act added a new Section 276 to the Atomic Energy Act relating to state authority to regulate radiation that is below the level of regulatory concern to the NRC. The section provides that no provision of the AEA or the Low-Level Radioactive Waste Policy Act of 1980 may be construed to prohibit or restrict the authority of a state of the United States to regulate, on the basis of radiological hazards, the disposal of off-site incineration of low-level radioactive waste if the NRC, after the date of enactment of this legislation, exempts such waste from regulation. The new section also provides that nothing in the section may be construed (1) to imply preemption of existing state authority, or (2) to confer any additional authority on states not described above.

E Safety of Shipments of Plutonium by Sea

Section 2904 of the Energy Policy Act requires the President, after consultation with the NRC, to submit a report to the Congress on the safety of shipments of plutonium by sea. The report must address (1) the safety of the casks, (2) the safety risks to the U.S., (3) upon request of any state, the adequacy of that state's emergency plans with respect to such shipments, and (4) the Federal resources needed to assist the states on account of such shipments. Within 90 days after submitting the report to the Congress, the President, again after consulting with the NRC, must provide to the Congress an implementation plan which incorporates the recommendations of the earlier report.

RADIATION PROTECTION

Licences and Radiation Safety Requirements for Irradiators (1993)

On 9 February 1993, the NRC published in the Federal Register (58 F.R. 7715) a new 10 CFR Part 36 to specify radiation safety requirements for the use of licensed radioactive materials in irradiators. The safety requirements apply to panoramic irradiators (those in which the material being irradiated is in air in a room that is accessible to personnel when the source is shielded) and underwater irradiators in which the source always remains shielded under water and the product is irradiated under water. The rule does not cover self-contained dry-source-storage irradiator devices, medical uses of sealed sources (such as teletherapy), or nondestructive testing (such as industrial radiography).

Before the adoption of Part 36, irradiators were licensed primarily under (1) the general provisions of 10 CFR 30.33, which requires that "equipment and facilities are adequate" and that the applicant is qualified by training and experience", (2) the general requirements of Part 20, for example, dose limits and the requirement for "adequate" surveys, and (3) the specific requirements in 10 CFR 20.203(c)(6) and (7) (or the new 10 CFR 20.1603) that deal with access control requirements for panoramic irradiators.

Although those safety requirements and policies for irradiators were generally understood and agreed upon and were incorporated on a case-by-case basis in the licences for operating irradiators, they were not contained in a single comprehensive document. Part 36 consolidates, clarifies, and standardizes the requirements for the licensing and operation of current and future irradiators.

REGIME OF NUCLEAR INSTALLATIONS

Decommissioning Funding (1992)

On 12 July 1992, the NRC published in the Federal Register (57 F.R. 30383) amendments to 10 CFR Part 50 regarding the timing of the collection of funds for decommissioning for those nuclear power reactors that have been shut down before the expected ends of their operating lives. The amendments provide that NRC will evaluate decommissioning funding plans for such reactors on a case-by-case basis. The evaluation will take into account the specific safety and financial situations at each power plant.

Receipt of Byproduct and Special Nuclear Material in Low Level Waste (1992)

On 21 October 1992 the NRC published in the Federal Register (57 F R 47978) an amendment to 10 CFR Part 50 to permit reactor operators subject to NRC licensing (both power reactors and research reactors) to send low level waste off-site to another licensee for treatment (e g , compaction or incineration) This amendment solves any problem respecting the reactor licensee's authority to receive back such low level waste The amendment does not authorize receipt of any material recovered from reprocessing of irradiated fuel

Combined Construction Permits and Operating Licences (1992)

On 23 December 1992, the NRC published in the Federal Register (57 F R 60975) amendments to its regulation 10 CFR Part 52, Early Site Permits, Standard Design Certifications, and Combined Licences for Nuclear Power Plants The amendments conform NRC regulations to the provisions of Title XXVIII of the Energy Policy Act of 1992 discussed at length above

RADIOACTIVE WASTE MANAGEMENT

Disposal of Contaminated Waste Oil by Incineration (1992)

On 7 December 1992, the NRC amended its regulation 10 CFR Part 2 to permit the onsite incineration of contaminated waste oils generated at licensed nuclear power plants without amending existing operating licences This action will help to ensure that the limited capacity of licensed regional low-level waste disposal facilities is used more efficiently while maintaining releases from operating nuclear power plants at levels which are "as low as reasonably achievable" Incineration of this class of waste must be in full compliance with the NRC's regulations which restrict the release of radioactive materials to the environment for each operating nuclear power plant Any other applicable Federal, State, or local requirements that relate to the toxic or hazardous characteristics of the waste oil will have to be satisfied

INTERNATIONAL REGULATORY ACTIVITIES

THE OECD NUCLEAR ENERGY AGENCY

THE REPUBLIC OF KOREA JOINS THE NEA/AMENDMENT OF THE STATUTE (1993)

This year, the Republic of Korea joined the OECD Nuclear Energy Agency. Since the NEA Statute does not envisage the participation of countries that are not members of the OECD, which is the case for Korea, the OECD Council Decision constituting the Statute had to be changed. Therefore, on 12 December 1992, the OECD Council adopted amendments to the Statute in order to permit new members to join the NEA upon the invitation of the Organisation. The OECD may suspend or end the participation in NEA of a non-member country of OECD at one month's notice for suspension and one year for withdrawal.

The subsequent exchange of letters containing the invitation and acceptance constitute an agreement between the OECD and the Republic of Korea.

In conformity with the principles and practice of all NEA countries with a nuclear programme, the Republic of Korea accords an absolute priority to the attainment and maintenance of the highest nuclear safety standards. Furthermore, in recent years, it has strengthened considerably its bilateral relations and co-operation with a number of NEA Member Countries. The Steering Committee for Nuclear Energy (the Agency's directing body) had accordingly approved in advance the candidature of Korea by recognising that its participation in the work of the NEA would be of "mutual interest" to all parties concerned.

The Republic of Korea's membership in the NEA does not prejudice the question of its possible membership in all of the OECD.

IAEA

IAEA BOARD OF GOVERNORS REVIEWS APPLICATION OF SAFEGUARDS IN THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA (1993)

These past months, the Board of Governors of the International Atomic Energy Agency has held a series of meetings to examine the problem of the IAEA inspections of certain nuclear installations in the Democratic People's Republic of Korea (DPRK) to which the latter objected. It is recalled that the IAEA is empowered to conduct inspections in the DPRK, in accordance with the Safeguards Agreement concluded in May 1992 under the Non-Proliferation Treaty (NPT) to which the DPRK has been a Party since 12 December 1985. It is also to be noted that the DPRK has announced its intention to withdraw from the NPT.

Following the meetings, the Board has each time adopted a Resolution confirming its conclusions. These Resolutions are reported in this note.

At its meeting on 22-25 February 1993, the Board considered the report of the Director General of the Agency and the statements by the Representative of the DPRK on the implementation of the Safeguards Agreement between the DPRK and the IAEA and took serious note of the significant inconsistencies between the DPRK's declarations and the Agency's findings resulting from ad hoc inspections and sample analysis, which remain unresolved despite extensive discussions. The Board therefore "called for full and prompt implementation of the Safeguards Agreement between the DPRK and the IAEA", stressed "that it is essential to verify the correctness and assess the completeness of the DPRK's initial report" and requested the Director General to "transmit this Resolution to the DPRK, to continue dialogue with a view towards urgent resolution of the issues and to report again on the matter not later than one month from the date of adoption of this Resolution at a further meeting to be convened for this purpose".

At this special meeting, held on 18 March 1993, the Board reviewed developments since adoption of the Resolution the preceding month and at the conclusion of its discussion on this matter, adopted a further Resolution whose salient points are reproduced below:

" The Board of Governors

Regretting the absence, so far, of a positive response by the DPRK,

Noting the recent announcement by the DPRK regarding its intention to withdraw from the NPT and the implications for the Safeguards Agreement with the Agency in the DPRK if such withdrawal were to take effect,

Confirms that the Safeguards Agreement with the DPRK (document INFCIRC/403) remains in force and that it is essential and urgent that the DPRK enable the Agency to take the necessary measures to resolve differences and to ensure verification of compliance with that Safeguards Agreement,

Requests the Director General to continue his efforts and dialogue and to report further on the response of the DPRK to the Resolution of 25 February at a meeting of the Board to be held on 31 March 1993 "

At that further meeting, held on 31 March-1 April 1993, the Board again reviewed the situation, in the light of a report by the Director General and adopted a new Resolution. In the Resolution, the Board found that the DPRK was not in compliance with its obligations under its Safeguards Agreement with the Agency. Therefore the latter was unable to verify that there had been no diversion of nuclear material required to be safeguarded. The Board therefore decided, as required by Article XII C of the IAEA Statute and in accordance with Article 19 of the Agreement, to report the DPRK's non-compliance and the Agency's inability to verify non-diversion of nuclear material required to be safeguarded, to all members of the Agency and to the Security Council and the General Assembly of the United Nations.

The Board decided to continue to follow the matter.

EUROPEAN COMMUNITIES

COUNCIL RESOLUTION ON RENEWAL OF THE COMMUNITY PLAN OF ACTION IN THE FIELD OF RADIOACTIVE WASTE (1992)

On 15 June 1992, the Council of the European Communities adopted the above Resolution (published in the Official Journal of the European Communities No C 158 of 25 June 1992). This plan, which is valid from 1993 to 1999, succeeds a similar plan adopted on 22 February 1980 which expired in 1992.

The plan is based on the following main points:

- continuous analysis of the situation, covering in particular, the status of research, the applicability of techniques, the status of administrative, regulatory and legal structures relating to radioactive waste management in each Member State and in the Community,
- development of technical co-operation in the Community regarding long-term or final storage of radioactive waste, which includes concerted action and information exchange regarding the study and opening up of sites for such storage,
- consultation on management practices and strategies in the context of the abolition of frontier controls within the Community,
- information of the public on the situation in respect of radioactive waste, and

- development of an international consensus through concerted action by the Member States on the positions to adopt in international organisations such as the International Atomic Energy Agency, the OECD Nuclear Energy Agency and the International Organisation for Standardisation

COUNCIL RESOLUTION ON THE TECHNOLOGICAL PROBLEMS OF NUCLEAR SAFETY (1992)

On 18 June 1992, the Council of the European Communities adopted a Resolution on the technological problems of nuclear safety (published in the Official Journal of the European Communities No C 172, Volume 35, of 8 July 1992) This Resolution follows a Resolution of 22 July 1975 on this subject and a report of the Commission of the European Communities to the Council, dated 24 January 1992, which stressed the need for the institutions responsible for nuclear safety within the Community to continue to participate actively in the well-established process of consultation and co-ordination in the context of the 1975 Resolution, and to extend the benefits of this work beyond the Community

The 1992 Resolution reaffirms the importance of technological progress in relation to the safety of nuclear installations and asks the Member States and the Commission to intensify work in this field by concerted action on key safety issues It specifies that this action may, where possible, be extended to Central and Eastern European countries and the Republics of the former Soviet Union In particular, it requests the Member States and the Commission to adopt as a fundamental and priority objective of Community co-operation in the nuclear field, that they should bring the nuclear installations of the above-mentioned countries and Republics up to safety levels equivalent to those in practice in the Community Finally, it encourages the Member States and the Commission to act in co-ordination in international fora on the basis of achievements reached in the Community towards a system of internationally accepted nuclear safety criteria and requirements, in particular in the framework of the IAEA

COUNCIL OF EUROPE

RECOMMENDATION OF THE PARLIAMENTARY ASSEMBLY ON NUCLEAR POWER PLANTS IN CENTRAL AND EASTERN EUROPE (1993)

The Parliamentary Assembly adopted the above Recommendation on 5 February 1993 at its 29th sitting The Parliamentary Assembly noted that it was generally accepted that certain types of Soviet-designed reactors were insufficiently safe and that that situation was compounded by other problems such as a shortage of qualified labour and a lack of spare parts This created a situation of potential danger, also, another accident (such as Chernobyl) would compromise the future of nuclear energy as a whole,

at a time when it provided approximately 25 per cent of electricity production in Western countries

The Assembly considered that a surge of solidarity was needed, and called on the Committee of Ministers of the Council of Europe to invite the governments of the Member States and the governments of the other Member States of the OECD to step up international co-operation on improving the state of nuclear power plants in the countries of Central and Eastern Europe. It suggested that this co-operation should, in particular, include the following measures

- **Cultivating safety** that is, making good shortcomings in legislation and standards, training staff, applying the special International Atomic Energy Agency (IAEA) programmes to enable staff to react more efficiently in emergencies
- **Operating improvements** a more sophisticated computer system is required to offset the potential for human error. In this context the restrictions on strategic exports imposed by the Co-ordinating Committee on Export Controls (COCOM) should be further reviewed. Better operation and monitoring could be exercised through independent regulatory and licensing agencies (which did not exist under the communist regime) which are the only safeguard against accidents being concealed from the public
- **Information and training** appropriate training on specific nuclear energy problems and general energy policy ones as well should be given at all levels, with particular attention being paid in the regions where nuclear power plants are located
- **Reactor modernisation** the Assembly considers that one of the most difficult aspects is an assessment by country/plant/unit taking account of both technical and economic aspects. Safety and viability criteria should be applied, and all reactors should comply with international safety standards
- **Economic implications** the necessary improvement in the safety of nuclear power plants in Central and Eastern Europe has important economic implications. Council of Europe Member States in a position to do so, must extend their assistance in this respect, ensuring proper co-ordination among themselves
- **Shut-downs** urgent studies should be undertaken to identify the reactors which are dangerous so as to determine which ought to be and can be shut down
- **Setting up a high-level decision-making mechanism** an ad hoc central mechanism could be set up with extensive, clear-cut powers, to decide on priorities and give clearance for various programmes in co-operation with national authorities. It should include representatives from the European Bank for Reconstruction and Development (EBRD) and the IAEA, to advise on economic viability and provide technical assistance respectively

The Recommendation also suggests that energy aid and technology transfers in Europe should be organised, and that increased financial resources be provided to the IAEA. Finally, it refers to radioactive waste management, asking that special attention be paid to problems in that area, in particular regarding waste transport and processing techniques on storage sites

AGREEMENTS

BILATERAL AGREEMENTS

Austria-Germany

AGREEMENT ON MUTUAL ASSISTANCE IN THE EVENT OF CATASTROPHES OR SERIOUS ACCIDENTS (1988)

By Federal Act of 20 March 1992 the German Parliament ratified the Agreement of 23 December 1988 between the Federal Republic of Germany and the Republic of Austria on Mutual Assistance in the Event of Catastrophes or Serious Accidents (Bundesgesetzblatt 1992 II p 206)

It is the purpose of the Agreement to provide for the legal framework for voluntary assistance in the event of catastrophes or serious accidents occurring in the territory of a Contracting Party at the request of the other Contracting Party. There is no special reference with regard to nuclear accidents or to incidents due to the use of radioactive substances. The very general scope, however, allows an interpretation that nuclear accidents and radiation incidents are included in the scope of application of the Agreement.

Austria-Poland

AGREEMENT CONCERNING EXCHANGE OF INFORMATION AND CO-OPERATION IN THE FIELD OF NUCLEAR SAFETY AND RADIATION PROTECTION (1989)

On 15 December 1989 a nuclear co-operation Agreement between Austria and Poland was signed (BGBl No 643/1990). The Parties agree to consult each other at least once a year on developments in the peaceful uses of nuclear energy, and to exchange information concerning radiation protection. They also agree to provide each other with information (according to a list annexed to the Agreement) about their respective nuclear facilities.

The Agreement also confirms the obligations of both countries under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (Vienna 1986) (the texts of the Conventions are reproduced in the Supplement to Nuclear Law Bulletin 38). In addition

a Party which finds increased radiation levels in its territory, which are not attributable to nuclear activities in that territory, is required to inform the other Party. The Parties also agree to facilitate scientific and technical co-operation in relation to nuclear safety and radiation protection.

The Agreement entered into force on 1 December 1990.

Austria and Poland also concluded on 24 November 1988 an Agreement on co-operation in the field of environmental protection (BGBl No. 39/1990), which entered into force on 1 March 1990.

China-Germany

ARRANGEMENT ON CO-OPERATION IN THE FIELD OF NUCLEAR SAFETY AND RADIATION PROTECTION (1992)

On 12/13 April 1992, the Federal Minister of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany and the State Agency for Nuclear Safety of the People's Republic of China signed an Arrangement on the Promotion of Co-operation in the Field of the Safety of Nuclear Installations and Radiation Protection (Umwelt 1992, No. 6, p. 258).

Within the framework of the respective domestic laws of the Contracting Parties and on the basis of the Agreement of 1984 on Co-operation in the Field of Peaceful Uses of Nuclear Energy and Radiation Protection (see Nuclear Law Bulletin No. 34), the Contracting Parties undertake to co-operate as follows: exchange of information and reports in the field of nuclear safety and radiation protection, communication of relevant decisions, exchange of experience and documentation.

Germany-Netherlands

AGREEMENT ON MUTUAL ASSISTANCE IN THE EVENT OF CATASTROPHES (1988)

By Federal Act of 20 March 1992, the German Parliament ratified the Agreement of 7 June 1988, between the Federal Republic of Germany and the Kingdom of the Netherlands on Mutual Assistance in the Event of Catastrophes Including Serious Accidents (Bundesgesetzblatt 1992 II p. 198).

The Agreement provides for a detailed framework regarding mutual assistance in the event of catastrophes. According to Article 1 of the Agreement the Contracting Parties are obliged to assist each other in accordance with the provisions of the Agreement and according to the given possibilities of the respective Contracting Parties. A Protocol which is annexed to the Agreement regulates the relationship of this instrument to the IAEA.

Convention of 26 September 1986 on Mutual Assistance in case of a Nuclear Accident or Radiological Emergency (the text of the Convention is reproduced in the Supplement to Nuclear Law Bulletin No 38) The Contracting Parties agree in the Protocol that the new bilateral instrument is applicable to nuclear incidents in principle. If however assistance has been granted on the basis of the above IAEA Convention, that Convention remains applicable to the catastrophe or accident concerned. However the bilateral Agreement is applicable to additional requests for assistance. The IAEA Convention applies as regards medical treatment of persons having suffered injury due to a nuclear incident or due to radioactive substances.

Germany-Russian Federation

AGREEMENT ON CO-OPERATION IN THE FIELD OF ENVIRONMENTAL PROTECTION (1992)

The Agreement of 28 May 1992 on the Promotion of Economic Co-operation in the Field of Problems Related to the Protection of the Environment between the Federal Minister of the Environment, Nature Conservation and Reactor Safety of the Federal Republic of Germany and of the Ministry for Ecology of the Russian Federation was published on 20 November 1992 (Bundesgesetzblatt 1992 II p 1242).

The Agreement provides for the general legal framework for co-operation in the field of the protection of the environment. There is no special reference to nuclear energy, but the broad scope of the Agreement may include nuclear energy as well. The Agreement entered into force on the date of its signature. It replaces the Agreement of 25 October 1988 between the Government of the Federal Republic of Germany and the Government of the USSR on co-operation in the field of environmental protection.

Russian Federation-United States

AGREEMENT ON THE SALE OF HIGHLY ENRICHED URANIUM (1993)

The United States and the Russian Federation signed an Agreement on 18 February 1993 concerning the sale to the United States by Russia of approximately 500 metric tons of highly enriched uranium (HEU) from its dismantled nuclear weapons. Both Parties affirm their commitment to the objectives of the Non-Proliferation Treaty and undertake to ensure that the nuclear material transferred for peaceful purposes under the Agreement will comply with all applicable non-proliferation, material accounting, physical protection and environmental requirements.

The HEU will be converted in Russia into low enriched uranium (LEU) for use in commercial reactors.

Within six months from the entry into force of this Agreement, the Parties will seek to enter into an initial contract to implement the Agreement. The contract will fix the conditions for conversion of the uranium, the time allowed, the allocation of the proceeds of the sales for the conversion of defence enterprises or environmental clean-up in Russia, the role of the private sector firms of the United States and the Russian Federation. The Agreement designates as the Executive Agents the Department of Energy of the United States and the Ministry of the Russian Federation of Atomic Energy.

The Agreement will remain in force until the full amount of HEU is converted to LEU, delivered and supplied to commercial customers.

MULTILATERAL AGREEMENTS

VIENNA CONVENTION ON CIVIL LIABILITY FOR NUCLEAR DAMAGE

The Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage has a world-wide vocation and entered into force on 12 November 1977. A table on the status of the Vienna Convention was published in Nuclear Law Bulletin No 44 of December 1989. Since then several countries have ratified or acceded to the Convention. The following table gives the status of signatures, ratifications, accessions to the Convention as at 11 January 1993.

Vienna Convention on Civil Liability for Nuclear Damage

Status of signatures, ratifications, accessions, successions

<i>State</i>	<i>Date of Signature</i>	<i>Date of Deposit of Instrument</i>
Argentina	10 Oct 1966	25 April 1967 (ratif)
Bolivia		10 April 1968 (access)
Brazil		26 March 1993 (access)
Cameroon		6 March 1964 (access)

<i>State</i>	<i>Date of Signature</i>	<i>Date of Deposit of Instrument</i>
Chile*	18 Aug 1988	23 Nov 1989 (ratif)
Columbia	21 May 1963	
Croatia		29 Sept 1992 (succ notif)
Cuba	10 Dec 1964	25 Oct 1965 (ratif)
Egypt	19 Aug 1965	5 Nov 1965 (ratif)
Hungary		28 July 1989 (access)
Lithuania		15 Sept 1992 (access)
Mexico		25 April 1989 (access)
Morocco	30 Nov 1984	
Niger		24 July 1979 (access)
Peru		26 Aug 1980 (access)
Philippines	21 May 1963	15 Nov 1965 (ratif)
Poland		23 Jan 1990 (access)
Romania		29 Dec 1992 (access)
Slovenia		7 July 1992 (succ notif)
Spain	6 Dec 1963	
Trinidad & Tobago		31 Jan 1966 (access)
United Kingdom	11 Nov 1964	
Yugoslavia**	21 May 1963	12 Aug 1977 (ratif)

Succ = succession

* Indicates reservation/declaration

** On 28 April 1992, the Director General received a Note from the Permanent Mission of the Socialist Federal Republic of Yugoslavia informing him that inter alia the Federal Republic of Yugoslavia (Serbia and Montenegro) "shall continue to fulfil all the rights conferred to and obligations assumed by the Socialist Federal Republic of Yugoslavia in international relations, including participation in international treaties ratified or acceded to by Yugoslavia"

JOINT PROTOCOL RELATING TO THE APPLICATION OF THE VIENNA CONVENTION AND THE PARIS CONVENTION

The Joint Protocol of 21 September 1988 relating to the Application of the Vienna Convention and the Paris Convention entered into force on 27 April 1992, three months after the date of deposit of instruments of ratification, accession, approval or acceptance by five States Parties to the Vienna Convention and five States Parties to the Paris Convention. The following table gives the status of signatures, ratifications, accessions to the Joint Protocol as at 11 January 1993

**Joint Protocol Relating to the Application of the Vienna Convention
and the Paris Convention**

Status of signatures, ratifications, acceptances, approvals, accessions

State	Date of Signature	Date of Deposit of Instrument
Argentina*	21 Sept 1988	
Belgium**	21 Sept 1988	
Cameroon*	7 Dec 1988	28 Oct 1991 (ratif)
Chile*	21 Sept 1988	23 Nov 1989 (ratif)
Denmark** ¹	21 Sept 1988	26 May 1989 (ratif)
Egypt*	21 Sept 1988	10 Aug 1989 (ratif)
Finland**	21 Sept 1988	
France**	21 June 1989	
Germany**	21 Sept 1988	
Greece**	21 Sept 1988	
Hungary*	20 Sept 1989	26 Mar 1990 (approv)
Italy**	21 Sept 1988	31 July 1991 (ratif)
Morocco*	21 Sept 1988	
Netherlands** ²	21 Sept 1988	1 Aug 1991 (accept)
Norway**	21 Sept 1988	11 Mar 1991 (ratif)
Philippines*	21 Sept 1988	
Poland*		23 Jan 1990 (access)
Portugal**	21 Sept 1988	
Romania*		29 Dec 1992 (access)
Spain**	21 Sept 1988	
Sweden**	21 Sept 1988	27 Jan 1992 (ratif)
Switzerland**	21 Sept 1988	
Turkey**	21 Sept 1988	
United Kingdom**	21 Sept 1988	

* Vienna Convention State

** Paris Convention State

¹ Does not include the Faroe Islands

² For the Kingdom in Europe

**CONVENTIONS ON EARLY NOTIFICATION OF A NUCLEAR ACCIDENT AND ASSISTANCE
IN CASE OF A NUCLEAR ACCIDENT OR RADIOLOGICAL EMERGENCY**

Both of the above Conventions were opened for signature on 26 September 1986 and entered into force thirty days after consent to be bound had been expressed by three States. Accordingly, the Convention on Early Notification became effective on 27 October 1986 and the Convention on Assistance on 26 February 1987, in accordance

with their Articles 12 3 and 14 3 respectively For States having expressed such consent after those dates they entered into force thirty days following such expression in accordance with their Articles 12 4 and 14 4 respectively (The text of both Conventions is reproduced in the Supplement to Nuclear Law Bulletin No 38)

The following tables give the status of signatures and ratifications of both Conventions as at 24 and 25 February 1993 respectively

Convention on Early Notification of a Nuclear Accident

Status of signatures, ratifications, acceptances, approvals or accessions

<i>State/Organisation</i>	<i>Date of Signature</i>	<i>Date of Deposit of Instrument</i>
Afghanistan*	26 Sept 1986	
Algeria*	24 Sept 1987	
Argentina*		17 Jan 1990 (access)
Australia*	26 Sept 1986	22 Sept 1987 (ratif)
Austria	26 Sept 1986	18 Feb 1988 (ratif)
Bangladesh		7 Jan 1988 (access)
Belarus*	26 Sept 1986	26 Jan 1987 (ratif)
Belgium	26 Sept 1986	
Brazil	26 Sept 1986	4 Dec 1990 (ratif)
Bulgaria*	26 Sept 1986	24 Feb 1988 (ratif)
Cameroon	25 Sept 1987	
Canada*	26 Sept 1986	18 Jan 1990 (ratif)
Chile	26 Sept 1986	
China*	26 Sept 1986	10 Sept 1987 (ratif)
Costa Rica	26 Sept 1986	16 Sept 1991 (ratif)
Cote d Ivoire	26 Sept 1986	
Cuba*	26 Sept 1986	8 Jan 1991 (ratif)
Croatia		29 Sept 1992 (succ notif)
Cyprus		4 Jan 1989 (access)
Democratic People's Republic of Korea*	29 Sept 1986	
Denmark	26 Sept 1986	26 Sept 1986 (on sign)
Egypt	26 Sept 1986	6 July 1988 (ratif)
Finland	26 Sept 1986	11 Dec 1986 (approv)
France*	26 Sept 1986	6 Mar 1989 (approv)
Germany*	26 Sept 1986	14 Sept 1989 (ratif)
Greece*	26 Sept 1986	6 June 1991 (ratif)
Guatemala	26 Sept 1986	8 Aug 1988 (ratif)
Holy See	26 Sept 1986	
Hungary*	26 Sept 1986	10 Mar 1987 (ratif)
Iceland	26 Sept 1986	27 Sept 1989 (ratif)
India*	29 Sept 1986	28 Jan 1988 (ratif)

Succ = succession

* Reservation/declaration deposited upon or following signature/ratification

<i>State/Organisation</i>	<i>Date of Signature</i>	<i>Date of Deposit of Instrument</i>
Indonesia*	26 Sept 1986	
Iran, Islamic Republic of	26 Sept 1986	
Iraq*	12 Aug 1987	21 July 1988 (ratif)
Ireland*	26 Sept 1986	13 Sept 1991 (ratif)
Israel	26 Sept 1986	25 May 1989 (ratif)
Italy*	26 Sept 1986	8 Feb 1990 (ratif)
Japan	6 Mar 1987	9 June 1987 (accept)
Jordan	2 Oct 1986	11 Dec 1987 (ratif)
Korea Republic of		8 June 1990 (access)
Latvia		28 Dec 1992 (access)
Lebanon	26 Sept 1986	
Liechtenstein	26 Sept 1986	
Luxembourg	29 Sept 1986	
Malaysia*	1 Sept 1987	1 Sept 1987 (on sign)
Mali	2 Oct 1986	
Mauritius		17 Aug 1992 (access)
Mexico	26 Sept 1986	10 May 1988 (ratif)
Monaco	26 Sept 1986	19 July 1989 (approv)
Mongolia*	8 Jan 1987	11 June 1987 (ratif)
Morocco	26 Sept 1986	
Netherlands*	26 Sept 1986	23 Sept 1991 (accept)
New Zealand		11 Mar 1987 (access)
Niger	26 Sept 1986	
Nigeria	21 Jan 1987	10 Aug 1990 (ratif)
Norway	26 Sept 1986	26 Sept 1986 (on sign)
Pakistan		11 Sept 1989 (access)
Panama	26 Sept 1986	
Paraguay	2 Oct 1986	
Poland*	26 Sept 1986	24 Mar 1988 (ratif)
Portugal	26 Sept 1986	
Romania		12 Jun 1990 (access)
Russian Federation* ¹	26 Sept 1986	23 Dec 1986 (ratif)
Saudi Arabia		3 Nov 1989 (access)
Senegal	15 Jun 1987	
Sierra Leone	25 Mar 1987	
Slovak Republic		10 Feb 1993 (succ notif)
Slovenia		7 July 1992 (succ notif)
South Africa	10 Aug 1987	10 Aug 1987 (ratif)
Spain	26 Sept 1986	13 Sept 1989 (ratif)
Sri Lanka		11 Jan 1991 (access)
Sudan	26 Sept 1986	
Sweden	26 Sept 1986	27 Feb 1987 (ratif)
Switzerland	26 Sept 1986	31 May 1988 (ratif)
Syrian Arab Republic	2 July 1987	
Thailand*	25 Sept 1987	21 Mar 1989 (ratif)
Tunisia	24 Feb 1987	24 Feb 1989 (ratif)
Turkey*	26 Sept 1986	3 Jan 1991 (ratif)
Ukraine*	26 Sept 1986	26 Jan 1987 (ratif)
United Arab Emirates*		2 Oct 1987 (access)
United Kingdom*	26 Sept 1986	9 Feb 1990 (ratif)

Succ = succession

* Reservation/declaration deposited upon or following signature/ratification

1 Continuation notified on 26 December 1991

<i>State/Organisation</i>	<i>Date of Signature</i>	<i>Date of Deposit of Instrument</i>
United States*	26 Sept 1986	19 Sept 1988 (ratif)
Uruguay		21 Dec 1989 (access)
Viet Nam Socialist Republic of		29 Sept 1987 (access)
Yugoslavia ²	27 May 1987	8 Feb 1989 (contin)
Zaire	30 Sept 1986	
Zimbabwe	26 Sept 1986	
Food and Agriculture Organisation		19 Oct 1990 (access)
World Health Organisation*	10 Aug 1988 (access)	
World Meteorological Organisation*		17 Apr 1990 (access)

* Reservation/declaration deposited upon or following signature/ratification

² Continuation notified on 28 April 1992

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

Status of signatures, ratifications, acceptances, approvals or accessions

<i>State/Organisation</i>	<i>Date of Signature</i>	<i>Date of Deposit of Instrument</i>
Afghanistan*	26 Sept 1986	
Algeria*	24 Sept 1987	
Argentina		17 Jan 1990 (access)
Australia*	26 Sept 1986	22 Sept 1987 (ratif)
Austria	26 Sept 1986	21 Nov 1989 (ratif)
Bangladesh		7 Jan 1988 (access)
Belarus*	26 Sept 1986	26 Jan 1987 (ratif)
Belgium	26 Sept 1986	
Brazil	26 Sept 1986	4 Dec 1990 (ratif)
Bulgaria*	26 Sept 1986	24 Feb 1988 (ratif)
Cameroon	25 Sept 1987	
Canada*	26 Sept 1986	
Chile	26 Sept 1986	
China*	26 Sept 1986	10 Sept 1987 (ratif)
Costa Rica	26 Sept 1986	16 Sept 1991 (ratif)

* Reservation/declaration deposited upon signature ratification acceptance approval accession

<i>State/Organisation</i>	<i>Date of Signature</i>	<i>Date of Deposit of Instrument</i>
Cote d'Ivoire	26 Sept 1986	
Croatia		29 Sept 1992 (succ notif)
Cuba*	26 Sept 1986	8 Jan 1991 (ratif)
Cyprus		4 Jan 1989 (access)
Democratic People's Republic of Korea*	29 Sept 1986	
Denmark	26 Sept 1986	
Egypt*	26 Sept 1986	17 Oct 1988 (ratif)
Finland	26 Sept 1986	27 Nov 1990 (approv)
France*	26 Sept 1986	6 Mar 1989 (approv)
Germany*	26 Sept 1986	14 Sept 1989 (ratif)
Greece*	26 Sept 1986	6 June 1991 (ratif)
Guatemala	26 Sept 1986	8 Aug 1988 (ratif)
Holy See	26 Sept 1986	
Hungary*	26 Sept 1986	10 Mar 1987 (ratif)
Iceland	26 Sept 1986	
India*	29 Sept 1986	28 Jan 1988 (ratif)
Indonesia*	26 Sept 1986	
Iran Islamic Republic of	26 Sept 1986	
Iraq*	12 Aug 1987	21 July 1988 (ratif)
Ireland*	26 Sept 1986	13 Sept 1991 (ratif)
Israel	26 Sept 1986	25 May 1989 (ratif)
Italy*	26 Sept 1986	25 Oct 1990 (ratif)
Japan*	6 Mar 1987	9 Jun 1987 (accept)
Jordan	2 Oct 1986	11 Dec 1987 (ratif)
Korea, Republic of*		8 Jun 1990 (access)
Latvia		28 Dec 1992 (access)
Lebanon	26 Sept 1986	
Libyan Arab Jamahiriya		27 Jun 1990 (access)
Liechtenstein	26 Sept 1986	
Malaysia*	1 Sept 1987	1 Sept 1987 (on sign)
Mali	2 Oct 1986	
Mauritius		17 August 1992 (access)
Mexico	26 Sept 1986	10 May 1988 (ratif)
Monaco*	26 Sept 1986	19 July 1989 (approv)
Mongolia*	8 Jan 1987	11 Jun 1987 (ratif)
Morocco	26 Sept 1986	
Netherlands*	26 Sept 1986	23 Sept 1991 (accept)
New Zealand*		11 Mar 1987 (access)
Niger	26 Sept 1986	
Nigeria	21 Jan 1987	10 Aug 1990 (ratif)
Norway*	26 Sept 1986	26 Sept 1986 (on sign)
Pakistan		11 Sept 1989 (access)
Panama	26 Sept 1986	
Paraguay	2 Oct 1986	
Poland*	26 Sept 1986	24 Mar 1988 (ratif)
Portugal	26 Sept 1986	
Romania		12 Jun 1990 (access)
Russian Federation* ¹	26 Sept 1986	23 Dec 1986 (contin)
Saudi Arabia*		3 Nov 1989 (access)
Senegal	15 Jun 1987	

Succ = succession

* Reservation/declaration deposited upon signature, ratification, acceptance, approval, accession

¹ Continuation notified on 26 December 1991

<i>State/Organisation</i>	<i>Date of Signature</i>	<i>Date of Deposit of Instrument</i>
Sierra Leone	25 Mar 1987	
Slovak Republic		10 Feb 1993 (succ notif)
Slovenia		7 July 1992 (succ notif)
South Africa*	10 Aug 1987	10 Aug 1987 (ratif)
Spain	26 Sept 1986	13 Sept 1989 (ratif)
Sri Lanka		11 Jan 1991 (access)
Sudan	26 Sept 1986	
Sweden	26 Sept 1986	
Switzerland	26 Sept 1986	31 May 1988 (ratif)
Syrian Arab Republic	2 July 1987	
Thailand*	25 Sept 1987	21 Mar 1989 (ratif)
Tunisia	24 Feb 1987	24 Feb 1989 (ratif)
Turkey*	26 Sept 1986	3 Jan 1991 (ratif)
Ukraine*	26 Sept 1986	26 Jan 1987 (ratif)
United Arab Emirates		2 Oct 1987 (access)
United Kingdom*	26 Sept 1986	9 Feb 1990 (ratif)
United States*	26 Sept 1986	19 Sept 1988 (ratif)
Uruguay		21 Dec 1989 (access)
Viet Nam, Socialist Republic of*		29 Sept 1987 (access)
Yugoslavia ²		9 Apr 1991 (notif)
Zaire	30 Sept 1986	
Zimbabwe	26 Sept 1986	
Food and Agriculture Organisation*		19 Oct 1990 (access)
World Health Organisation*	10 Aug 1988 (access)	
World Meteorological Organisation*		17 Apr 1990 (access)

Succ = succession

- * Reservation/declaration deposited upon signature, ratification, acceptance approval accession
- 2 Continuation notified on 28 April 1992

AGREEMENT TO EXTEND THE 1987 REGIONAL CO-OPERATIVE AGREEMENT FOR RESEARCH, DEVELOPMENT AND TRAINING RELATED TO NUCLEAR SCIENCE AND TECHNOLOGY (RCA) (1992)

On 10 June 1992, the Parties to the 1987 Asia Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology (RCA) adopted an Agreement to extend the 1987 Agreement for another five years with effect from 12 June 1992. The Parties to the RCA are

Australia, Bangladesh, China, India, Indonesia, Japan, the Republic of Korea, Malaysia, Pakistan, Singapore, Sri Lanka, Thailand, Viet Nam

(The text of the 1987 Agreement is reproduced in Nuclear Law Bulletin No 41)

THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY (1991)

On 4 October 1991, the Parties to the Antarctic Treaty (1959) adopted the Protocol on Environmental Protection

The genesis of this Protocol lay in the strong opposition on environmental grounds to the Convention on the Regulation of Antarctic Mineral Resource Activities (Wellington, 1988). As a consequence of the refusal of France and Australia to ratify the Wellington Convention (entry into force requires notification by all Antarctic Consultative Parties), their campaign to ban all mineral resource activities and to find a means to afford comprehensive legal protection to the Antarctic environment, the Parties agreed to adopt the Protocol and to suspend all mineral activities for a period of 50 years. Hence, Article 7 of the Protocol prohibits any activity relating to mineral resources (except scientific research), while Article 25(5) permits an amendment to Article 7 after 50 years only if there is in force a binding legal regime that includes an agreed means for determining whether, and if so, under what conditions such activities would be acceptable.

The Protocol enunciates a number of general principles and rules regarding the protection of the environment in the Antarctic Treaty area. These principles are given specific substance in several annexes treating different aspects of environmental protection: environmental impact assessment, the conservation of fauna and flora, waste disposal and waste management (including radioactive waste), the prevention of marine pollution, and specially protected areas. In the main body of the Protocol, the Parties commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems, designating the continent as a nature reserve, devoted to peace and science.

In the planning and conduct of all activities in the area, the Parties undertake to limit the adverse impacts on the environment, to make prior assessments on the basis of adequate knowledge about possible detrimental effects, and to monitor the impacts of their activities. Furthermore, the Protocol provides for international co-operation, for the inspection of all activities liable to cause damage, for the prompt notification and co-operative response to emergency situations and for the establishment of a Committee on Environmental Protection to oversee its implementation. Under Article 16, the Parties undertake to elaborate in one or more annexes rules and procedures regarding liability for damage arising from activities taking place in the Antarctic Treaty area and covered by the Protocol.

Annex III on Waste Disposal and Waste Management contains two provisions on radioactive waste. Under Article 2 of this Annex, States Parties are required to remove from the Treaty area all radioactive waste generated after the coming into force of the Annex, while under Article 8, they are required to elaborate and annually review management plans for all kinds of waste, including radioactive waste. For the purposes of records and environmental impact assessments, wastes are to be classified into five categories, of which radioactive waste is the fifth. It will be recalled that the Antarctic Treaty itself prohibits the disposal of radioactive waste in the Treaty area.

At the 17th Antarctic Consultative Meeting, held in November 1992, the Parties agreed to create a working group to consider the question of establishing a régime for liability and compensation.

FRANCE

Decree No. 92-1391 of 30 December 1992 on the National Radioactive Waste Management Agency*

(Published in the Official Gazette of the French Republic of 31 December 1992)

TITLE I

GENERAL PROVISIONS

Section 1

The National Radioactive Waste Management Agency (ANDRA) shall fulfill its responsibilities in accordance with Section 13 of the Act of 30 December 1991 [on research in the field of radioactive waste management] Each year, the Agency shall submit to its responsible Ministers a report on the work performed or to be performed in the underground laboratories for the study of the appropriateness of deep geological formations for the storage of radioactive waste This report shall be established following the opinion of the Scientific Board set up by Section 10 of this Decree

The Agency shall submit to its responsible Ministers not later than 31 December 2005, and following the opinion of the Scientific Board an analytical report on the results obtained with, as the case may be, a project for an underground storage centre for highly radioactive, long-lived waste

* Unofficial translation by the Secretariat

TITLE II

ADMINISTRATIVE ORGANISATION

Section 2

The Board of Directors of the Agency shall include

- 1 A Member of Parliament or a Senator appointed by the Parliamentary Bureau for the Evaluation of Scientific and Technological Selections,
- 2 Six State representatives, appointed on proposal of the Ministers for Energy, Research, the Environment, the Budget, Defence and Health, respectively,
- 3 Five persons of note representing economic circles concerned by the work of the establishment, one of whom to be proposed by the Minister for Health,
- 4 Two persons of note, qualified in fields within the competence of the establishment, one of whom to be proposed by the Minister for the Environment,
- 5 Seven representatives of the staff of the Agency, elected in accordance with the provisions of the Decree of 26 November 1983 (implementing the Act of 26 July 1983 on democratisation of the public sector)

The members of the Board shall be appointed for a term of five years. With the exception of those persons mentioned in paragraphs 1 and 5 above, the members shall be appointed by Decree adopted following a report by the Minister for Energy.

The Chairman of the Board of Directors shall be selected from among its members, on its proposal. He shall be appointed by Decree adopted following a joint report by the Ministers responsible for the Agency.

Section 3

The members of the Board of Directors mentioned in paragraphs 2 and 3 of the preceding Section who leave their employment or who no longer meet the criteria according to which they were appointed shall be replaced under the conditions set by the Act of 26 July 1983 referred to above.

The members of the Board as well as the persons who are called upon to attend its meetings shall respect the confidentiality of the discussions by the Board. They shall not divulge any industrial or commercial secret they might learn during the exercise of their functions.

A member of the Board may be represented at a meeting by another member of the Board. No member may have more than three proxies.

Section 4

The Board of Directors shall meet at least three times a year. The Chairman shall determine the agenda

Except in case of emergency, the place, date and agenda shall be communicated to the members of the Board of Directors, the Government Commissioner, the State Controller and the Director General at least two weeks beforehand

The Government Commissioner, the State Controller and the Director General shall attend the meetings in an advisory capacity

The Board of Directors may not validly debate if less than half its members are present or represented

However, decisions made, following a new summons on the same agenda within twenty days, shall be valid without any conditions as to quorum

Decisions shall be adopted by a majority of votes of the members present or represented, in case of equal votes, the Chairman has the casting vote

The Chairman may also call upon any person to participate in the meetings in an advisory capacity, if he considers that this will be useful for consideration of a particular item on the agenda

The debates shall be registered in an official record, signed by the Chairman and communicated to the members, the Government Commissioner, the State Controller and the Director General within two weeks following the meeting

Section 5

The Board of Directors shall settle the affairs of the establishment during its debates. In particular, it shall consider

- 1 The general conditions for the organisation and operation of the establishment,**
- 2 The programme of work of the establishment,**
- 3 The annual status of forecasts for revenues and expenditure, and where necessary, the corrected statements of account during the year,**
- 4 The accounts for each calendar year and the attribution of the results,**
- 5. Loans,**
- 6 Acquisitions, exchanges and transfers of real estate, as well as leases taken or transferred, the duration of which exceeds three years,**
- 7 Acquisitions, extensions and transfers in financial joint ventures,**

- 8 Acquisitions and transfers of industrial property rights,
- 9 General conditions for recruitment, employment and remuneration of staff,
- 10 The annual activity report of the establishment and the reports referred to in Section 1 of this Decree,
- 11 The follow-up to be given to the results of the work of the establishment,
- 12 The general conditions for entering into contracts and agreements,
- 13 The general conditions for assignment of repayable subsidies and advances

The Board of Directors shall determine its rules of procedure

Section 6

The decisions of the Board of Directors shall take effect automatically unless the Government Commissioner or the State Controller lodges an objection within ten days of receiving the official record of the meeting

If the Government Commissioner or the State Controller lodges an objection, he shall submit it, as the case may be, to the Minister for Energy or the Minister for the Budget, who must make a decision within one month. If there has been no decision within this time-limit the decision of the Board shall take effect

Section 7

The Director General for Energy and Raw Materials shall be the Government Commissioner for the establishment. He may at any time ask to see any documents or archives and make or have checks made. He shall give the opinion of the Government on the problems raised

If he cannot attend meetings of the Board of Directors or the Finance Committee, he may be represented by an official under his authority

Section 8

The Director General of the Agency shall be appointed on the proposal of the Chairman of the Board, by Decree made following a report of the responsible Ministers. He shall be the legal representative of the establishment

He shall prepare the meetings of the Board of Directors, implement its decisions and report on their implementation to the Board

He shall manage the services of the Agency, and in that capacity, shall have authority over the staff

Under the rules of procedure set out by the Board of Directors, he may

- 1 Liquidate and and authorise revenues and expenditure,
- 2 Decide on the use of available funds and investment of reserves and acquire and transfer shares,
- 3 Decide on real estate leases to be taken or transferred when their duration does not exceed three years,
- 4 On behalf of the establishment, shall enter into any agreements, including contracts, for work, supplies and services,
- 5 Seek injunctions and enter into any lawsuits,
- 6 Recruit, manage and dismiss the staff of the establishment

Section 9

The Agency shall have a Financial Committee to be consulted on

- 1 The conditions and price-level for the services of ANDRA,
- 2 The investment programmes prepared on a pluriannual basis and on the conditions for their financing

The Board of Directors may consult the Committee on any financial questions

The Financial Committee shall be chaired by the Director General of the Agency It shall be made up of eight representatives of economic circles concerned by the work of the establishment, including the members of the Board of Directors mentioned in Section 2(3) and three members appointed for the same term as the members Board of Directors by Order of the Minister for Energy

The Government Commissioner and the State Controller of the establishment may attend the meetings of the Committee

The members of the Financial Committee as well as the persons called upon to attend its meetings shall respect the confidentiality of the discussions of the Committee They shall not divulge any industrial or commercial secret they might learn through the exercise of their functions

Section 10

ANDRA shall have a Scientific Board The Board shall be made up of a maximum of twelve members, appointed for five years by a joint Order of the Ministers for Energy, the Environment and Research

The Chairman shall be appointed from within its members by joint Order of these Ministers

The Chairman of the Board of Directors and the Director General of the Agency may attend meetings of the Scientific Board

In addition to the cases set out in Section 1 of this Decree, the Board shall be consulted on the research and development programmes carried out by ANDRA

- 1 It shall give its advice and make recommendations on priorities, taking into account the scientific and technical aspects of the programmes as well as their costs,
- 2 It shall be kept informed on the execution of the programmes,
- 3 It shall assess their results

The advice, recommendations and reports of the Scientific Board shall be communicated to the Board of Directors

TITLE III

FINANCIAL AND ACCOUNTING PROVISIONS

Section 11

The resources of the establishment shall include, in particular

- 1 Remuneration for services rendered,
- 2 Proceeds of royalties, in particular those for inventions and new processes to which the establishment contributes,
- 3 Subsidies from the State, local government, public establishments and any public or private national, Community or international agency,
- 4 Interest on, and repayment of any loans granted by the establishment,
- 5 Proceeds from capital investments,
- 6 Revenues from movable goods and real estate belonging to the establishment and the proceeds from their transfer,
- 7 Proceeds from publications,
- 8 Gifts and legacies,

9 Financial proceeds,

10 Proceeds from loans

Section 12

The Agency shall apply the rules in practice in industrial and commercial companies in respect of financial and accounting management

At the end of each year, the Director General shall draw up the balance-sheet and accounts of the establishment for submission to the Board of Directors

The Agency shall be audited by two auditors appointed by the President of the Appeals Court within whose competence the establishment lies

Section 13

The establishment shall be subject to the economic and financial control of the State as provided by the Decrees of 9 August 1953 and 26 May 1955. Control of the financial management of the establishment shall be carried out by a State controller

TITLE IV

DIVERSE PROVISIONS

Section 14

The assets, rights and obligations which relate to the tasks assigned to ANDRA by Section 13 of the Act of 30 December 1991 shall be transferred from the Atomic Energy Commission (CEA) to the Agency according to the conditions set by joint Order of the Ministers for the Economy, the Budget and Energy, made following consultation of the Board of Directors of the CEA and the opinion of the Board of Directors of ANDRA

Section 15

The employees of the CEA assigned to the activities transferred to ANDRA may within three years of the entry into force of this Decree unless otherwise specified in their work contract, opt to remain as executives within the CEA or to be integrated within ANDRA, account being taken of their seniority in the CEA

Special agreements shall provide for the possibility of reciprocal access by officials of ANDRA and public establishments or undertakings in the nuclear or energy sector to the vacant posts therein

Section 16

The Minister of State, Minister for Public Offices and Administrative Reforms, the Minister for Economy and Finance, the Minister for the Environment, the Minister for Industry and Foreign Trade, the Minister for the Budget, the Minister for Research and Space, and the Minister Delegate for Energy shall be responsible for implementing this Decree in their field of competence

Done in Paris, 30 December 1992

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Germany

Stillegung und Besertigung Kerntechnischer Anlagen Tagungsbercht der AIDN/INLA-Regionaltagung in Schwerin 1992 ("Closure and Decommissioning of Nuclear Installations Proceedings of the AIDN/INLA Regional Meeting in Schwenn 1992") Edited by Norbert Pelzer, NOMOS Verlagsgesellschaft 1993, Baden-Baden, 326 pages

This is a report on the fourth regional meeting (2-3 July 1992) of the German branch of the International Nuclear Law Association (INLA), which was devoted to an examination of the present state of, and potential developments in, the law on decommissioning of nuclear installations. The report reproduces papers given at the seminar and also contains brief summaries of the subsequent discussions. As well as papers dealing with the German law, there are a number recording the experience of various other Western European countries and reporting on the regulations applicable in those countries. Several of these papers are in English.

Netherlands

Internationaal Atoomenergierecht de Betrokkenheid van Nederland bij meer dan Honddred Verdragen By E P M W Domsdorf, published by W E J Tjeenk Willink Zwolle, 1993, 1299 pages

This impressive volume deals with 117 treaties concerning atomic energy to which the Netherlands is a Party. Following several introductory chapters providing a factual and legal background, the author describes and analyses each treaty either individually or in groups of related instruments. Included are treaties relating to both civil and military matters, from the North Atlantic Treaty to the IAEA Conventions on Early Notification and Assistance in the Case of a Nuclear Accident or Radiological Emergency as well as treaties on other subjects but with nuclear aspects, such as the Outer Space Treaty and the London Convention on the Prevention of Marine Pollution by the Dumping of Wastes and

Other Matter Although the text is entirely in Dutch, there is an Introduction and Summary of 124 pages in English

NEA-IAEA

Proceedings of the Symposium on Nuclear Accidents - Liabilities and Guarantees, published by the OECD, Paris, 1993, 600 pages

The Proceedings of the Symposium on Nuclear Accidents - Liabilities and Guarantees contain the full texts of the papers presented in English and French as well as the ensuing discussions and panels which followed the sessions. The Symposium, organised by the OECD Nuclear Energy Agency (NEA) in collaboration with the International Atomic Energy Agency (IAEA), took place in Helsinki, Finland, from 31 August to 3 September 1992.

The Symposium's title reflects the emphasis placed in the current negotiations on revision of the Vienna Convention and the multiplicity of liabilities in this field, in private law and international public law, and on the various types of guarantees in this field. The sessions dealt with the lessons of the Chernobyl accident, the evaluation of work on revising the Conventions on civil liability for nuclear damage and specific questions in that context, insurance of the nuclear risk, supplementary funding of compensation and finally, State liability for transboundary nuclear damage. Twenty-four papers were delivered covering this wide range of subjects, and in addition to the discussions they generated, the sessions were followed by panels which analysed the complex of issues involved in revising the Vienna Convention and financial guarantees for the nuclear risk respectively, the closing panel discussed the actors in the compensation of nuclear damage.

A fuller description of the questions covered by the Symposium is given in Nuclear Law Bulletin No 50.

The Proceedings of the Symposium may be ordered from local distributors of OECD publications or from OECD Publications Service, 2 rue André-Pascal, 75775 Paris Cedex 16, France.

CURRENT EVENTS

INLA

Nuclear Inter Jura'93

The International Nuclear Law Association (INLA) will hold its eleventh Congress from 12 to 17 September 1993, in Rio de Janeiro, Brazil. The theme of Nuclear Inter Jura'93 will be "Nuclear Energy and Sustainable Development - the Role of Law". The INLA meetings are held every two years and give all INLA members and interested delegates the opportunity to review and discuss developments in nuclear laws and regulations, and to exchange views on legal problems related to the peaceful applications of nuclear energy.

Nuclear Inter Jura'93 will be arranged into five working sessions and the closing session. The working sessions will deal with licensing and decommissioning, nuclear liability coverage, nuclear trade, radiological protection and radioactive waste management respectively. The closing session will attempt to draw conclusions on the contents of the papers presented at the preceding sessions and the ensuing discussions.

Further information may be obtained from The INLA Congress Technical Committee, Rua General Severiano, 90 - Sala 206, 22294-900-Rio de Janeiro, Brazil. Telephone (55(0)21) 546 2395/2338/2320.

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