NUCLEAR LAW BULLETIN No. 46

Contents

This Bulletin includes a Supplement

December 1990
Nuclear Energy Agency
Organisation for Economic Co-operation and Development

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

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

The original Member countries of the OECD are Austria Belgium Canada Denmark France the Federal Republic of Germany, Greece Iceland Ireland Italy Luxembourg the Netherlands Norway, Portugal Spain Sweden Switzerland Turkey the United Kingdom and the United States The following countries became Members subsequently through accession at the dates indicated hereafter Japan (28th April 1964) Finland (28th January 1969) Australia (7th June 1971) and New Zealand (29th May 1973)

The Socialist Federal Republic of Yugoslavia takes part in some of the work of the OECD (agreement of 28th October 1961)

The OECD Nuclear Energy Agency (NEA) was established on 1st February 1958 under the name of the OEEC European Nuclear Energy Agency It received its present designation on 20th April 1972 when Japan became its first non European full Member NEA membership today consists of all European Member countries of OECD as well as Australia Canada Japan and the United States The Commission of the European Communities takes part in the work of the Agency

The primary objective of NEA is to promote co-operation among the governments of its participating countries in furthering the development of nuclear power as a safe environmentally acceptable and economic energy source

This is achieved by

- *encouraging harmonisation 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

LEGAL NOTICE

The Organisation for Economic Co-operation and Development assumes no liability concerning information published in this Bulletin

FOREWORD

This edition of the Bulletin contains two articles the first of which, bearing in mind the responsibilities to future generations, analyses the ethics and legal aspects of radioactive waste disposal, while the second article concerns a topical issue - it provides an account of the recent Nuclear Non-Proliferation Treaty Revision Conference In the Chapter on Case Law, a court ruling in the United Kingdom on a claim for compensation for damage to real property due to radioactive contamination is reported, as is a Swiss court decision to compensate market-gardeners for economic losses following the Chernobyl accident

In the framework of post-Chernobyl international co-operation, two agreements have been concluded under the auspices of the International Atomic Energy Agency and the World Health Organisation respectively, the first on an international research programme on the effects of the accident, to be carried out at the Chernobyl Centre, and the second setting up a programme to monitor and mitigate its effects on the exposed population, to be carried out at the Obninsk Centre These agreements are reported in the Bulletin which also reproduces extracts from a Note by the USSR authorities on the economic and social consequences of the accident in that country.

As usual, information is provided on the latest developments in nuclear legislation This time, in particular, the new French Act on nuclear third party liability is analysed and its text is reproduced in the Supplement to the Bulletin

Finally, a series of bilateral agreements in the nuclear field are noted

DETAILED TABLE OF CONTENTS

LIST OF CORRESPONDENTS TO THE NUCLEAR LAW BULLETIN

ARGENTINA - Mr J MARTINEZ FAVINI, Head, Legal Department, National Atomic Energy Commission

AUSTRALIA - Ms W BARTLETT, Manager, Library Services, Australian Nuclear Science and Technology Organisation (ANSTO)

AUSTRIA - Dr F W. SCHMIDT, Head of Section, Nuclear Co-ordination and Non-Proliferation, Federal Chancellery

BELGIUM - Mr P STALLAERT, Social Security Administration, Ministry of Employment and Labour

- Mr F RIVALET, Legal Services, Ministry of Economic Affairs

BRAZIL - Mrs D FISCHER, Legal Affairs, Comissao Nacional de Energia Nuclear

CANADA - Mr P J BARKER, General Counsel, Atomic Energy Control Board

CHINA - Ms LIU XUEHONG, Deputy Director General, Bureau of Foreign Affairs, Ministry of Nuclear Industry

CZECHOSLOVAKIA - Mr R BEZDEK, Professor at the Institute of Law, Czechoslovak Academy of Sciences, Prague

DENMARK - Ms D MOGENSEN, Legal Department, Ministry of Justice

FINLAND - Mr Y SAHRAKORPI, Senior Ministerial Secretary, Ministry of Trade and Industry

FRANCE - Mr J C MAYOUX, Deputy Head, Legal Department, Atomic Energy Commission

GERMANY - Dr N PELZER, Institute of Public International Law of Gottingen University, Division of Nuclear Law

GREECE - Greek Atomic Energy Commission

HUNGARY - Ms V LAMM, Professor at the Institute for Legal and Administrative Studies, Academy of Sciences, Budapest

IRELAND - Mr A HODSON, Higher Executive Officer, Nuclear Section, Department of Industry and Energy

ITALY - Dr F NOCERA, International Affairs Directorate, National Committee for Research and Development of Nuclear and Alternative Energies

JAPAN	-	The Director, Research and International Affairs Division, Atomic Energy Bureau, STA
MEXICO	-	Mrs Ma DE LOURDES VEZ CARMONA, Instituto Nacional de Investigaciones Nucleares
NETHERLANDS	-	Mr J N HOUDIJK, Ministry of Economic Affairs
	-	Dr A R I ARIS, Head, Legal and Regulatory Division, Radiation Protection Dir , Ministry of Welfare, Public Health, Culture
NORWAY	-	Mr R NESSETH, Executive Officer, Royal Ministry of Petroleum and Energy
PORTUGAL	-	Mr H VIEIRA, Head, Nuclear Energy Division, General Directorate for Energy
SPAIN	-	Ms L CORRETJER, Professor, Faculty of Law, Complutense University, Madrid
	-	Mr A ARIAS, General Secretary, Empresa Nacional de Residuos Radiactivos - ENRESA
SWEDEN	-	Mr H RUSTAND, Legal Adviser, Ministry of Justice
	-	Mr G HEDELIUS, Legal Adviser, Nuclear Power Inspectorate
	-	Mr C G HESSER, Legal Adviser, Institute of Radiation Protection
SWITZERLAND	-	Mr W A BÜHLMANN, Head, Legal Services, Federal Office of Energy
TURKEY	-	Mr E BARUTÇUGIL, Director, Department of Research, Development and Co-ordination, Turkish Atomic Energy Authority
UNITED KINGDOM	-	Mr D GRAZEBROOK, Legal Consultant, UK Atomic Energy Authority
	-	Mr S MILLIGAN, Assistant Treasury Solicitor, Department of Energy
UNITED STATES	-	Ms J BECKER, Special Assistant for International Affairs, Nuclear Regulatory Commission
	-	Mr R NEWTON, Assistant General Counsel for International Development and Defence Programmes, Department of Energy
URUGUAY	-	Dr D PEREZ PINEYRUA, Legal Adviser, National Atomic Energy Commission

YUGOSLAVIA	-	Mr M TRAMPUZ, Secretary, Nuclear Energy Commission
ZAIRE	-	Mr N LOBO, Atomic Energy Commission
IAEA	-	Mr B BRANDS, Legal Division, International Atomic Energy Agency
CEE	-	Legal Service, Commission of the European Communities
	-	Mr. J M COURADES, General-Directorate, Environment, Nuclear Safety and Civil Protection, Radiation Protection Division
WHO	-	Mr S FLUSS, Chief, Health Legislation, World Health Organisation
IIEL	-	Dr P CAMERON, Director, International Institute of Energy Law, Leiden University

STUDIES AND ARTICLES

ARTICLES

RADIOACTIVE WASTE MANAGEMENT ETHICS, LAW AND POLICY

Pierre Strohl*
Deputy Director General
OECD Nuclear Energy Agency

The long-term risks associated with radioactive waste constitute fertile round for claims of an ethical nature, claims calling for more detailed analysis of the relations between technological projects, ethical requirements, legal rules and policy options, so that things can be seen in their proper perspective The principles and practices of long-lived radioactive waste management also provide an excellent opportunity to demonstrate a practical approach to responsibilities towards future generations, avoiding the opening of false windows

> *" On the one side there are the scientists who say 'we are ordinary citizens leave us to work in peace on the other side there are the moralists rapidly becoming moralisers censors who issue rules blocking new developments essential for humanity*
>
> *François Gros Biologist Professor at the College de France*

Like all regular readers of the Nuclear Law Bulletin I was greatly interested in the article by Lars Persson entitled "Nuclear Waste Management - Ethical Considerations for the Lawmaker" reporting on a seminar organised in 1987 in Sweden by KASAM to provide an opportunity for multidisciplinary discussion on this topic(1)

However I cannot help but wonder about the reasons for giving such prominence to an examination of the ethics of the solutions proposed in this particular field Is this approach more justified here than in other technical spheres and if so why? Does it in fact make any key contribution? These questions in the context of the management of long-lived radioactive waste provide a most interesting opportunity for *reflection on how technology ethics law and policy options interrelate in modern society*

* Responsibility for the ideas expressed and the facts given rests solely with the author

Moral Judgements on Science and Technology Through the Ages

Since Antiquity, the axiological aspects of scientific thinking and practical application have given philosophers food for thought Value judgements about science and technology have naturally increased in importance in line with the increasingly important role played by science and technology in society The content of such judgements has itself evolved considerably over time, but the most significant change in intellectual approach is doubtless that which took place between the last century and the second half of this century

We find it quite natural today, to submit the results of scientific research and the application thereof to a judgement as to the "value" of the goals of human action i e to judge them on the basis of moral criteria It can even be said that **this need to fill an apparent ethical vacuum** is one of the most marked characteristics of modern technological societies(2) However western civilization, at least since the Enlightenment, has been so strongly marked by confidence in scientific and industrial progress that the main schools of thought, whether liberal or socialist, have inevitably been influenced by a faith in science, represented in its most extreme form by the positivists The belief that the sciences can explain everything and thus provide the solution to all problems and open the way to human happiness **protected them from being judged on moral grounds** Even the Catholic church s condemnation of modernism at the end of the 19th century was aimed at the harmful effects of rationalist thought on conventional theology and social doctrine rather than at technical progress as such

The spectacular explosion of "technoscience '(3) in the second half of the 20th century has thrown fresh light on the conflict between the extraordinary benefits it procures for mankind on the one hand and, on the other, the risks detrimental effects and social upheaval involved in this unprecedented Promethean enterprise The equations "fear = obscurantism", "greater knowledge = happinness" no longer hold way, on the contrary, contemporary technology gives rise to a feeling of anxiety stemming from its most obvious adverse effects damage to the biosphere and natural equilibria, doubts as to the ability of the experts to master the most advanced techniques the fear that those with such techniques at their disposal thereby gain irresistible power, excessive urbanisation, the materialism of consumer societies, unemployment and the marginalisation of those who cannot cope properly with an excessively technological lifestyle, etc The impression that these effects may be global and irreversible in nature - even if this is difficult to prove with certainty helps aggravate these instinctive reactions against technoscience Lastly, certain modern technologies such as computers telecommunications and audiovisual applications can have a direct but somewhat insidious influence on personalities, ways of thinking and the higher human values

In intellectual circles today, there is **a whole range of 'technophobic schools of thought**, mostly moralist-based which categorically deny the "supremacy" of science This negative attitude goes further than the traditional suspicion of technology which has long been accused of having no other goal than its own success of appearing to be "a desire for power, at the opposite extreme from genuine ethics"(4) Today s technophobia is the expression of a more radical criticism (illustrated by the few examples below) of scientific progress through its technical applications The best known argument developed by Heidegger is that modern technology holds man to ransom However, his analysis of the essence of technology contains a seed of hope of escape from its clutches through an opposition of art and poetry to industry At a less metaphysical level, the American sociologist Lewis Mumford is of the opinion that the "neotechnical" age is one in which a "megamachine" tends to take over from real life leading to the mechanisation of man, and that the only escape lies through some kind of ecological reaction In an even more systematic fashion J Ellull denounces the totalitarian nature of the technological sytem which has no respect for any values which do not serve its own ends In his last book(5), he argues that the success of technology is "bluff" in that it raises more problems than it solves, that modern society needs to anticipate future technological advances but that this becomes impossible beyond a certain level of development and that we therefore risk being made prisoners of the technological system In fact, he does not believe that technology has a human face thus echoing the views of Georges Bernanos who states that "a world won over for technology is a world lost for liberty" and that "machines dehumanize man"

It is of course impossible to lament the demise of an exaggerated belief in science as a result of awareness and acceptance of ethical values superior to the formal logic of scientific and technical reasoning **However, excessive technophobia is hardly likely to lead to a more balanced view** It tends to encourage public opinion systematically to see developments in modern societies in moral terms something which is not without drawbacks For experts are then in turn tempted to use moral arguments to justify technological decisions which in fact were dictated by the state of their knowledge and experience this inevitably appears as an attempt to "win over" public opinion As for policy-makers they run the risk of choosing technical solutions which are more readily acceptable to majority opinion even if they are not the best from the state-of-the-art viewpoint or from that of prospects for scientific progress Making technological projects excessively dependent on essentially moralistic considerations thus includes the risk of ambiguity or demagogy Of course a direct dialogue between scientific experts motivated by the continual quest for further knowledge together with technical experts motivated by the realisation of their "manufacturing capacity on the one hand and moral philosophers on the other is not easy since the two groups operate at different levels

There are however ***avenues which modern moralist thinking can explore to find a way out of the impasse of technophobia*** for example the "limited/unlimited debate" and the choice of what is best for man" It can compare "the limits imposed on man by outside forces" to those he "imposes on himself" Reconciling such elements would link up with "the essential teaching of the Bible which makes man master of the universe with the responsibility of turning it to the benefit of all" and with Christ s liberating message(6) It is curious to discover in this evolution of moral judgement that **the condemned hope of secular positivism has a chance of being reborn, in another form, in a religious, or at least spiritualist-based philosophy** (see other examples in Note 6)

What are the Ethics of Radioactive Waste Management?

The ethical concerns of those responsible for radioactive waste management programmes are **linked essentially to the long-term risks and costs of certain categories of such waste** i e with what is perceived as a responsibility towards future generations Paradoxically the ability to quantify in terms of hundreds of thousands of years and in accordance with scientifically proved laws governing radioactivity *decrease the period during which long-lived waste will remain highly radioactive has struck the public* imagination much more than the permanent danger represented by certain other toxic wastes The fact of giving an "exact" figure for the duration of a risk extending over periods of time practically inconceivable for man thus takes on symbolic force

From a more rational viewpoint it must first be recognised that the ethical standards concerning the control of the long-term hazards created by human activity are universally valid **there cannot be one standard for radioactive waste and another for chemical pollution** Whether a number of millenia is estimated as being **the duration of a risk** or whether it is deemed impossible to make any estimate naturally cannot given the time-scale involved **change the nature of the ethical standard**

There is another essential factor which is not always properly understood The promotion of a given technology which involved **unacceptable risks would, in itself, be morally reprehensible** whatever the duration of the risks in question i e whether it was only the present generation which was exposed to them or also its immediate or distant descendants In fact the ethical problem relating to future generations arises in a different fashion modern man would be morally at fault in relation to future generations were he to decide **to protect only his own generation against a long-term technological risk by omitting to implement lastingly effective safety measures**, thus transmitting to his descendants a hazard which he himself finds unacceptable together with the burden of arranging for their own protection "Solidarity in time" must therefore accompany "solidarity in space"(7) The only thing in the context of radioactive waste management to be avoided on ethical grounds is simply an attitude of indifference with respect to its long-term effects a conclusion just as valid in other fields the sin of negligence towards the future of humanity or if preferred the breach of an obligation to plan for the future ("devoir de prevoyance") which in a civilisation in which risks are inherent assumes the importance demonstrated by P Lagadec(8)

The term "unacceptable" risks was used in the foregoing discussion to mean only those which are ethically unacceptable "in themselves", i e are contrary to a "categorical imperative" such as in the field of genetics, interference in the process of human reproduction In fact, **the acceptability of industrial risks usually varies in line with the benefits obtained** This observation leads to the question whether a less rationalistic more empirical conception of ethics - in simple terms based more on the opinions of Stuart Mill than of Kant - would not result in a more precise analysis? According to *utilitarian ethics* the purpose of any moral act is to procure the greatest happiness of the largest number of people At first sight this approach enables a better assessment of the ethical value of a given technology by comparing its advantages and disadvantages for society as a whole Unfortunately, it provides **no practical guide as to how to determine when it is that the advantages outweigh the disadvantages sufficiently to ensure a result which would be considered by most people as an overall gain** In other words a purely ethical standard cannot by itself trace a clear line between those technological risks which are acceptable and those which are not Social cost/benefit analyses are based on a range of factors which are both subjective (and perhaps moral in nature but may also be psychological, esthetic, etc) and objective (economic, sociological, technical etc) and are clearly outside the scope of an examination of a scale of moral values It is even more difficult to extend a judgement of this nature to the relative usefulness of a given technology for generations in the distant future i e to weigh the positive aspects they may inherit against the negative ones That, in any case, would mean **attributing to the society of tomorrow our own concept of the greatest possible good**, which would be contrary to the empirical approach chosen as an example

Lastly, it is tempting, in modern times, to resort to systems of *sociological ethics* to analyse our problem(9) However, it seems unlikely that any ethical judgement would be capable, in this respect, of adding anything to a properly implemented legal solution since according to such rules, ethics like law, must be considered as *a social product*, by definition coherent for a given society at a given moment We shall explain below why, in these circumstances, it is better to use a legal standard as a basis

What Rule of Ethics, Given the Uncertainties of the Future?

The Seminar organised in Sweden in 1987 attempted to reply to this question in spite of our inability to make long-term predictions(10) In addition to the uncertainties discussed at the Seminar - notably those relating to the behaviour of individuals and groups, changes in mentality and the impact of technology on the environment - there are of course others, not least the way in which ethical rules themselves will evolve

A priori, all ethical rules are based on **the hope that man is capable of behaving better** or, at least of behaving as if he were better (Albert Camus tells us that faced with the absurd even Sisyphus "preaches that higher loyalty which denies the gods and lifts rocks He, also, finds that everything is fine") One can believe either that, over the long term and despite certain temporary interruptions, history shows a constant development of man s moral conscience or on the contrary and like philosophers and historians of decadence, that civilisations follow cycles consisting of the rise, the apogee and then the decline of the fundamental values on which they are based In fact, the most pertinent observation and one commonly made, is that **scientific and technological expertise develop in a more constant and rapid fashion than the ability of human societies to put its applications to the common good**, and to develop an ethical code of a commensurate level with the considerable material resources at their disposal(11) This observation alone is enough to justify the quest for moral values which are in harmony with modern technology-based societies It also shows that in addition to uncertainties directly linked to the impact of technological progress there are those concerning the ability of societies to put new technology to good use

The conclusions of the Swedish Seminar, which are designed to provide an ethical answer to these uncertainties, may be summarized as follows

- intrinsically safe radioactive waste repositories should be constructed, designed in such a way that no control or protection measures by future generations are necessary

- such systems must at the same time be "reparable", i e allow future measures to be taken in respect of them in the event of weakness, thus not be irreversible

This approach is based on two reasonable hypotheses that radioactive waste management techniques will improve and that our descendants will want to protect themselves against the risk of radiation The reasoning leading to the choice of such an approach does not, on the other hand seem very soundly based and that for the following reasons

- the proposal that containment systems should be "reparable" has nothing to do with long term uncertainties but relates to doubts about the reliability of today s technology and the decision to apply this technology to dispose of waste in a manner which currently is regarded as intrinsically safe would be weakened by any extra condition requiring reversibility at some undefined time in the future,

  it may as indeed Lars Persson acknowledges, prove technically impossible to construct repositories which without any supervision, ensure protection against accidental human intrusion or natural phenonema affecting containment, while at the same time remaining accessible and "reparable" after sealing

The conclusion that "a repository should be constructed so that it makes controls and corrective measures unnecessary while at the same time not making controls and corrective measures impossible" amounts to wanting to give future generations the double benefit of not having to take any measures to control the risk connected with radioactive waste repositories while at the same time preserving the option of taking action to increase the safety of such repositories should this prove possible with new methods of conditioning or storage Such a conclusion appears difficult to put into practice and no doubt incorporates a contradiction similar to that existing between society s desire for maximum protection against the risks involved and its desire for complete freedom of action

An Alternative Approach

The arguments put forward by Lars Persson actually reveal a dilemma of another type Should the problem of radioactive waste disposal be settled definitively now using the techniques available today so as not to burden future generations with this task or is it preferable to bank on a technological leap forward in the future which would allow them to effect such disposal in better conditions? One example might be the transmutation of long-lived radioactive waste - or actinides at least into shorter-lived or even stable radionuclides which would (in theory) avoid or at least delay the need for disposal in deep geological formations and limit their scope of application The reply to the second question depends entirely on how the experts rate the chances that foreseeable scientific and technological progress will render feasible as well as when and at what cost - a better technique than the geological containment of long-lived waste Ethics have nothing to do with solving the uncertainties involved in such an assessment but should lead to the following criteria being proposed

- a sufficiently high likelihood of finding some preferable solution which could be judged by comparing its advantages with those of the solution currently available

  an obligation to ensure that waste is stored temporarily under surveillance during the whole period required for the development of an alternative solution and in conditions of safety equivalent to those required in classic radioactive waste management scenarios a period of a hundred years or so is considered realistic for storage of this type and in any case it would doubtless be considered too risky to opt for a new technique the development of which required any longer than this

- an obligation to invest without delay in research programmes to identify ways of implementing a waste management strategy different from that selected by those in charge of current national programmes

Such persons of course base their decisions on likely future developments and at the same time on a reasonable confidence in their ability to assess the long-term safety of repositories using methods currently available, as was recently stated by the Radioactive Waste Management Committee of the NEA(12) The second approach, **qualified by the conditions described above, would be to leave future generations free to use some other technique while giving them the means to do so,** which is also in line with the duty to plan ahead It would also imply sufficient confidence that new technology will be developed It could be argued that this freedom of choice is illusory since a commitment to a particular approach to radioactive waste disposal will already have been made as of now, but this is not altogether accurate In the event of failure, it would always be possible, after prolonged temporary storage, to resort to **disposal in geological formations.**

Both approaches are defensible from an ethical viewpoint, although pertaining to different schools of ethics The first is characterised by a greater degree of caution whereas the second may appear somewhat speculative **The real issue is not ethical in nature but concerns the ability to judge the possible advantage of new technologies over current ones, in a particularly complex field** Perhaps the most reasonable conclusion is that an approach giving more weight to ethical considerations than to expert assessments risks arbitrarily introducing even greater uncertainty The caution inherent in the choice of a known technology whose long-term safety aspects can be scientifically assessed, is also of ethical merit Confidence in the prospects for radical scientific progress is based on past experience which has been very widely tested but which **cannot take the place of a rational forecast concerning the possible advantages, in any given case, of a future technological innovation** It is a good reason for pursuing research into solutions which cannot in the present state of knowledge be envisaged but must not serve as a pretext for unjustified delays in implementing radioactive waste disposal programmes

In short ethical analyses are not able **to resolve the uncertainties relating to long-term risks and can only help us define what standards of behaviour we should adopt here and now**

* * *

Ethics and Law

The tendency to consider the problem of radioactive waste from an ethical viewpoint reflects, to a certain extent **doubts as to whether the legal provisions in force** can guarantee that a satisfactory solution will be found This tendency opens the way for a whole series of considerations, the general tenor of which cannot be ignored perhaps the law is not an effective instrument for controlling the risks inherent in modern technology? Should existing regulations be revised in the light of new ethical concepts? Has legal analysis nothing to contribute to the discussion among scientists, philosophers and sociologists about technological risks?

The first part of this paper has pointed out the risk of illogicality and the gaps involved in a purely ethical approach to the issue of radioactive waste Moreover, such an approach fails to take account of the fact that most countries **have adopted particularly strict laws and regulations,** usually the fruit of the very active international co-operation existing in this field **designed specifically to ensure protection against the long-term risks created by such waste** It thus seems appropriate to examine the merits peculiar to a legal approach to the type of problem at issue here although it is somewhat paradoxical to have to do so in connexion with the management of radioactive waste

It should first be said that ethics may be defined broadly as "the practical philosophy of action" and that law is thus obviously connected with ethics although in current usage, this latter term is confused with morals The way in which, while remaining connected **law differs from ethics merits explanation** Moral values represent for each individual the ideal, the way each person assesses his moral obligations is both subjective and "unilateral" (i e purely personal by himself and for himself) Legal standards on the other hand are objective and "bilateral", they apply in the same way to everyone and are designed to regulate relations between two or more individuals the right of the one corresponding to the obligation of the others(13)

Most fundamental rules of law (for example, those relating to the respect of individual rights and freedom to good faith in performing obligations to the protection of public order, etc) are actually moral in nature and many others have a moral content (protection of the handicapped, the annulment of contracts for immoral purposes stricter liability for intentional fault the equitable compensation of damage etc) However the law enforces *a minimum moral standard* only that directly related to its purpose (relations between subjects of the law) and that can reasonably be required from all men living in society not that which is attainable only by the most virtuous

This apparent *ethical shortcoming* of the law is in fact the counterpart of its practical superiority a rule of law is enforceable i e if need be legitimate force may be used to ensure its application to all In the final analysis, the distinction between moral action and the law which best helps grasp their different contributions to the solution of a problem, seems to me to be as follows a lawyer is trained to reason on two different levels, one concerning value judgements and the other concerning practical solutions From the axiological viewpoint he bases his solution on legal foundations which resemble a form of political morality (equality before the law the certainty of legal relations, the separation and hierarchy of powers the general application of legal rules, the protection of the legitimate interests of the individual and the maintenance of public order, etc) From the practical effectiveness viewpoint, legal rules cannot be separated from the conditions relating to their implementation They lose all meaning unless they can be enforced whereas moral ideals are not measured in terms of the ability or intention of men to comply with them It can then be seen that it is the formulation and enforcement of legal rules which give concrete form to the "ethics of consequences" talked about in the Swedish Seminar

There is therefore a necessary coherence, rather than contradiction between ethics and the law but, at the same time, the (without any doubt unrealistic) quest for total coherence would constantly lead to rules of law being questioned Confusing ethics and law would run the risk of narrowing the practical options available to the law - notably as regards controlling technology and opening the way to ideological illusions or, worse still, to the subjection of the law to such illusions

Law and 'Technoscience'

It is this reconciliation operated by the law between those values which are most desirable and the practicability of giving concrete effect to them in modern society, which makes the legal approach to scientific and technical projects so useful Conscious of the fundamental relativism of legal measures lawyers will recognise that the law cannot directly encompass the values peculiar to scientific creation (research into the causes and effects of physical and biological phenomena) and technical innovation (research into the means of attaining a given result) since they are foreign to its purpose The law is, on the other hand, concerned by the effects on society of technoscience and especially by the possible threats to legally protected interests (private or collective) in accordance with its own standards which are not subject to scientific or engineering goals

Since its purpose is precisely defined and subject to the requirement that the effects it is trying to obtain must be practicable the law is less subject to the temptation to interfere in the field of technoscience than may be the case for a certain form of moral imperialism It controls the effects of such science in another fashion by starting from an analysis of the scientific data available and projects envisaged Laws and regulations lay down the precautions and preventive measures to be taken defend protected rights determine liability in the event of damage etc In adopting such an approach the law makes use of its own special concepts resources and methods but the provisions it enacts themselves depend on the actual state of science and technology it may authorise or ban make a given application subject to conditions of varying severity but it is not able to imagine, a priori, the technical solution which would be the best or only one compatible with the law

When the effects of a new technology are such as to justify special treatment for example added risks for man or the environment or significant changes in private life or in social equilibria it may be necessary to establish a special legal regime which, to a certain extent constitutes an exception to the ordinary law This is the case for nuclear energy space programmes computers telecommunications audiovisual applications and biotechnology On such occasions a particularly close relationship is formed

between the law and the technology in question due advantage has to be taken of the new technology but at the same time its potentially harmful effects, not satisfactorily regulated by existing provisions must be controlled In modern societies, many new technologies call for important legal innovations, i e not only specific responses by the forming of specialised branches of law but also a process of the more general adaptation of conventional legal concepts to new technoscience creations **This innovative adaptive process** must include an assessment and thus a knowledge of the concrete realities of scientific and technical progress There is, however, no need for it to include condemnation or approval in principle of some or all aspects of modern technoscience's new creations such judgements falling more naturally to moralists who fail to inform themselves sufficiently about the subject-matter, preferring to rely on symbols (the sorcerer's apprentice, man the slave of machines or, on the contrary, capable of taming natural forces progress in human communications, or manipulation of public opinion by the media, etc), since these facilitate an analysis in terms of good and evil

Opinio juris will not be unaffected by these labels of good and bad attached to the effects of technoscience In certain cases - such as applications in genetic engineering or other research directly affecting man - it will be in agreement with the moral judgement made But in general, the regulation (in the broad sense of the term) of technological activity will require more than a superficial reaction, than purely and simply rejecting or accepting It will involve measuring the effects of such activity on the basis of the legal rules applicable and subjecting it to the provisions of these rules(14)

Superiority of the Legal Approach

It is interesting to note that a philosopher, Michel Serres, no stranger to debates between moralists and scientists, has recently turned to consideration of the relationship between science and the law as regards risks which pose a threat to the world's natural balances(15) He finds, in the ancient boundaries of the plots of land on which agricultural civilizations are based the common origin of geometry and law, in the stability rigourousness and precision of these boundaries, the same mental discipline which "characterises the contract defined by the lawyer and also that on which science is based Law predates science and, perhaps, gives birth to it, or rather a common, abstract and sacred origin unites them Before that must have existed only that chaos which confounds worldly things the causes forms and relations of attribution and which confuses subjects This sounds altogether like our current problems " In place of the original social contract binding men but forgetting nature, of natural law which limits itself to human nature to the exclusion of the world, leaving only reason, like the sciences, of the "contemporary debate opposing at times violently, in two instances, science and the law, rational reason and cautious judgement ", Michel Serres proposes the concept of a "natural contract" by which man can exist in harmony with his environment

Such a vision, even if not (nor intended to be) sufficient to serve as a basis for a genuine philosophy of law, has at least the merit of drawing attention, in timely fashion, to the possibility of a constructive dialectical comparison between the goals sought by the law and those of scientific projects, the importance of which in the modern world makes it more necessary than ever before to be fully conversant with the practical means of preserving man's primordial future interests It is precisely this ability to achieve a harmonious relationship with scientific and technological reasoning which seems to be missing from an approach based on purely ethical concepts

In conclusion, there is always a risk of conflict between legal standards and the goals of technoscience, but as the rules of law are *vigilant from a proper perspective* with regard to the rules governing scientific knowledge and technological innovation, the law will be able to make an objective assessment of the *social benefits* involved, thus avoiding fruitless antagonism between "rational reason" and "cautious judgement"

Reconciling Ethics and Law in Policy Decision-Making

Analysing the comparative merits of the ethical and legal approaches to the management of long-lived radioactive waste may seem somewhat artificial since at the end of the day, the solution chosen is a political decision It could in fact be said, to use a fashionable expression, that the choice poses *a societal problem* The term is overused, but does at least signify, and quite accurately that this is not a matter that should be left to experts alone The decision must remain the responsibility of the political authorities(16)

However, simply noting that the solution implemented by means of laws, regulations and the courts is based on a political decision is not enough to account for all the data - whether technical or not - used to circumvent the uncertainties relating to the long-term risk of radiation On the contrary **it is the way in which these data interrelate which will enable this objective to be achieved** Let us therefore examine how in a process of constructive interaction the contributions supplied by the various disciplines in question tie in together

1) It is technology which, in accordance with criteria of feasibility, effectiveness and durability defines the whole system of containment designed to prevent or if appropriate delay the migration of the radionuclides involved to the biosphere - solidification of waste, construction of artificial barriers use of natural barriers by emplacement in deep geological formations etc

2) The purpose of scientific methods of evaluation is to identify the risks of migration of the radioactivity **the importance and probability of these risks as well as the long-term performance of the containment systems constructed by the engineers**

3) The policy decision involves drawing conclusions from the scientific and technical work carried out, and that from various standpoints

   - the effectiveness of the solutions proposed as regards the level of protection notably over the long term, they are intended to guarantee

   - the acceptability of the level of protection which is reasonably feasible using the disposal methods available in the light of the social costs and benefits of the technological process as a whole applied to the use of nuclear energy and control of the risk of radiation this assessment of acceptability cannot be dissociated from consideration of the moral values the scope of which we have endeavoured to define

4) Regulatory policies as broadly defined - legislative instruments institutional mechanisms administrative controls, etc - are designed to establish a normative framework for waste disposal activities account being taken of the need to supplement technical measures with institutional ones inasmuch as these latter form an integral part of the safety of the disposal methods adopted (for example surveillance of and the keeping of records concerning radioactive waste repositories) and this implies a judgement about the reliability particularly in the long term of such non-technological measures

Two observations may be made on the basis of this analysis First the real policy decision that concerning the acceptable risk, is closely dependent on the scientific and technical project in question as well as on another complex series of factors economic social moral psychological etc It would be unrealistic to endeavour to conceive a priori of a solution representing an ideal balance between the advantages and disadvantages of a given technoscience product it is a question simply of making **an evaluation of a limited range of technically feasible solutions with a corresponding balance of social costs and benefits** on which a positive or negative judgement will be made **Each level of concretely achievable balance is determined above all by the performance of the technical system itself** Moreover it must be recognised that both the objective data involved in this evaluation and the subjective aspects of the judgement are necessarily placed in the context of the present day or at most in that of a relatively near and foreseeable future It is in practice impossible to make sufficiently accurate long-term forecasts about

technological development, or changes in socio-economic conditions or in attitudes This in no way implies that the interests of future generations should be neglected, **just that the error of deciding what solution would supposedly be preferred by them, must be avoided**

Responsibility Towards Future Generations

The foregoing analysis leads to a number of partial conclusions which may be debatable but at least have the merit of being usable at the level of concrete action How can a synthesis be made so as to reply in coherent fashion, to the concerns about long-term responsibility linked with methods of radioactive waste management?

At the level of energy policy, for those countries which have not yet adopted nuclear power programmes, the problem of the management of waste from chemical reprocessing or spent fuel (representing nearly all long-lived high-level waste) forms part of the general cost/benefit analysis of nuclear technology as a whole In other countries, this first stage has, in theory, already been completed, the assessment which remains to be made is that of the social cost of the various methods envisaged for the long-term control of the risk of radiation associated with an accepted technology, account being taken of the actual benefit procured by the technology in question and also of that transmitted to future generations notably the contribution to the need for a reliable energy supply on economically favourable terms, as well as the reduction of atmospheric pollution As said above this assessment will in practice be made on the basis of the data currently available and will reflect our own judgement on the present and future balance of advantages and disadvantages In the particular case of countries (like Sweden) which have decided to put an end to their nuclear programme, the cost/benefit balance has been judged negative It is all the more negative in that the social cost of the management of radioactive waste will not be offset by the potential benefit (on which, in any case, doubt is cast in these countries) of a future supply of nuclear energy Furthermore this assessment should also take account of the costs and benefits of replacing nuclear power plants with other energy sources, this will give a different overall result

From the legal standpoint, responsibility towards future generations, in a very wide sense will include the adoption of laws and regulations as well as measures by the competent authorities to enforce and monitor compliance with the level of safety judged acceptable, the obligation of operators and others concerned to apply the statutory safety standards, and liability (in the strict, legal sense) for compensation of damage caused The purpose of such laws, regulations and exercise of regulatory power is to ensure the best possible protection judged both necessary and sufficient against the risks presented by radioactive waste - from its conditioning and temporary storage to its disposal - by using the latest techniques As for nuclear operators and agencies specialised in waste management - i e operators from the private quasi-public or public sectors - their obligations, as well as provisions for the enforcement therof, are to be found in these laws and regulations This applies also to the requirement to compensate any damage caused by a fault in the containment system and to obligations to constitute the corresponding financial guarantees, whether by mandatory insurance or a system of government insurance From a strictly legal viewpoint it is **the quality, continuity and permanence of the regulatory policy adopted** - defined in its broadest sense and as formulated hereafter - **which provides the only real possible answer to the requirements of responsibility towards future generations** This indeed applies not only to the management of radioactive waste but also to all other long-term technological risks

As thus conceived, obligations in relation to our responsibility towards future generations - adoption at the outset and subsequent continuation of a regulatory policy in support of the ban on transmitting to such generations, risks and burdens which we ourseves find unacceptable operate at three levels

- the statutory obligations of nuclear operators
- the political obligation of lawmakers to adopt and maintain provisions in accordance with this objective,
- the functional obligation of the regulatory authorities to ensure enforcement of such provisions

The first of these levels raises no particular legal problem While this is less certain with regard to the two others they in fact both fall within the scope of **two essential government tasks** ensuring the safety of citizens as well as the permanence of the laws and institutions designed to achieve this result In reality these two functions cannot be separated **the safety of individuals and the community requires a certain degree of stability both as regards the law and the instruments for implementing it** In addition **the more elementary the interests at stake** (personal safety) those which it is the first duty of any legal system to guarantee - the more necessary is this *protective function* and the greater the need for its continuity

The form of protection needed in the case of radioactive waste, and which is becoming increasingly relevant in modern societies is that against major technological risks most of which require long term planning and continuity in regulatory policy The first guarantee of effective long-term safety lies in the objective sought by such policies inasmuch as they reflect the awareness of lawmakers and regulatory authorities of the scope of the risks to be controlled Moreover the high degree of permanence of public order legislation enacted to attain such an objective together with the natural continuity of institutions responsible for a task of this nature constitute **a legal safeguard against the danger of a relaxation of such policies or of their implementation** Lastly, should it appear that shortcomings in certain projects for the storage or disposal of one country s waste involved a risk of radioactive contamination in other countries **an additional guarantee might be provided by the conclusion of international agreements** on safety standards and practices

Any system of legal obligations capable of ensuring the protection of future generations for as long as the risk of radiation persists can therefore only be based on *regulations* designed to control this risk inasmuch as in the first place the initial objective of such regulations at a stage as near as possible to the production of the waste, is to ensure long-term containment and secondly this policy option is not reversible i e the regulations and their enforcement will remain operative(17)

It may further be noted that **this strategy of the continuity of norms of legal protection** in response to the ethics of long-term responsibility corresponds to a certain philosophy of history Like Karl Popper we believe that the most pressing obligation is that which we have towards our own generation and the following one (which he contrasts to the sacrifice of generations for a Utopian goal) For it is by the constant quest for and implementation of a better system of defence for itself and its immediate descendance that each generation nurtures and bequeathes to future generations the chance to benefit from an accumulated heritage Such an analysis at the same time rejects the Utopian mirage inevitably incorporated in concepts of millenia-long responsibility

Do National Policies for the Disposal of Radioactive Waste Comply With the Necessary Conditions?

The regulations governing radioactive waste management in most nuclear countries deal with the problem of long-term risks in much more detail than is the case in other fields such as the management of other toxic waste

In the first place, **the regulations governing the operation of nuclear installations and the use of radioactive substances** (prior authorisation monitoring of the implementation of the conditions attached to authorisation radiation protection and safety norms etc) **include provisions on management of the waste produced** Furthermore in a second stage nuclear countries have adopted **special provisions** concerning all radioactive waste management operations statutory rules and regulatory control the creation of specialised agencies the constitution of funds etc As for provisions governing liability and compensation for nuclear damage these too cover operations relating to radioactive waste The main characteristic of these legal provisions and institutional mechanisms is to ensure by means of obligations imposed on the nuclear industry the implementation of a particularly coherent and comprehensive policy for the management of radioactive waste(18)

Another essential characteristic of strategies for the management of long-lived radioactive waste implemented within legislative frameworks of this type is that they are based on the use of artificial and natural physical barriers to isolate the waste from the biosphere It is therefore essentially the integrity of these barriers which has to guarantee the long-term safety of waste repositories This being so, any *institutional controls* provided for - the monitoring of radiation of sealed repositories by the regulatory authorities and the latter keeping them on records, restrictions on site-use, etc - by way of additional precautions or even as proof of vigilance **are not, in principle, seen as being necessary for safety** Since they require continuous human intervention (or at least consistent behaviour), such provisions are considered as involving more uncertainty than physical containment and can only be used as a temporary measure even if the history of legal institutions includes many examples of provisions of this type remaining in force for several centuries(19)

The durability, though not immortality, of institutional mechanisms is, on the other hand, essential for the proper functioning of the funds set up to cover the total costs of the definitive construction of repositories by waste producers This applies also to regimes for compensation, in the highly unlikely event of damage caused by a failure in the containment system It is likely that a system of compensation from public funds will be the most appropriate solution following the operational phase which includes the construction of the repository, emplacement of the waste and closure of the facility

This overview of the radioactive waste management method chosen confirms the need for continuity of regulatory policy, as mentioned above and shows that the legal framework set up meets this need It also demonstrates that **the function of regulatory control is crucial till closure of the repository, whereas institutional mechanisms are of less importance in the post-closure phase** and become increasingly irrelevant as the radioactivity of the waste decreases

* * *

In conclusion, it seems to us that while the quest for an *ethical supplement* in the field of radioactive waste management may correspond to a general feeling of concern on the part of the public there is no practical justification for such an exercise What is true is that the success achieved in this field **in reconciling** technological progess ethical concerns about protecting the interests of future generations, policy choices designed to balance the advantages of a new energy resource against the constraints and costs required if long-term safety is to be guaranteed and lastly, the laws and regulations adopted with this end in view constitutes **a unique body of experience** which could usefully serve as a model for other industrial activities giving rise to similar problems It has to be recognised that the results achieved are far from perfect that human error can adversely affect this coherence and that much remains to be done This does not alter the fact that **the public underestimates the results which have been already achieved** and that an effort must be made to inform public opinion, in a manner accessible to those who are not experts in this field about the concepts and practices of radioactive waste management

Notes and References

(1) *NLB* No 43, June 1989 Lars Persson discussed the same topic in his communication "Ethical Aspects on Nuclear Waste" at the September 1989 Congress of the *International Nuclear Law Association* in Tokyo The theme of the Seminar was "Ethical Action in the Face of Uncertainty" and was organised by the *Swedish Consultative Committee for Nuclear Waste Management (KASAM)* in collaboration with the *National Board for Spent Nuclear Fuel (SKN)* in September 1987 in Stockholm (for a summary of the discussions, see the SKN Report No 29 of April 1988) Participants included scientists and technical experts as well as sociologists and theologists

(2) In fact the theme of the last volume of *Cahiers internationaux de sociologie* volume 88 (PUF 1990) is "The need for ethics" ("La demande d'éthique") As to the social and cultural effects of modern technology see the summary report of a symposium in "Man and Technology" (Cambridge 1983)

(3) This convenient neologism indicates the interpenetration of the phases of basic science applied science the technological innovation process and its industrialisation, which characterises the modern techynology system, as opposed to the conventional scheme (and even to the distinction made by Schumpeter between invention and innovation) The integration of modern scientific activities and technology raises in crucial fashion the issue of the relationship between knowledge and power thus of policy options, see on this topic Jean-Jacques Salomon "Science et politique" (Editions du Seuil 1970)

(4) Jean-Yves Goffi "La philosophie de la technique" page 8, collection Que Sais-Je (PUF 1988) This work gives a picture of the development of ideas about technology and in particular of philosophical reactions to modern technology, supplying references to the most important analyses For an examination of Heiddeger's theses about technology, see François Guery "La societe industrielle et ses ennemis" (Editions Olivier Orban 1990) See also, in "Histoire des techniques" *Encyclopédie de la Pléiade* (Gallimard, 1978), the chapters entitled "Vers un système technique contemporain" "Science et technique" "Progrès technique et société" "Technique et droit" "Technique et politique", also Alexandre Koyré "Les philosophes et la machine" and "L univers de la précision" in *Etudes d'histoire de la pensée philosophique* (Gallimard 1971) L Mumbord "Le mythe de la machine" (translation published by Fayard 1974) Pierre Thuillier in "D Archimede à Einstein" (Fayard, 1988), states that those arguing *for* or *against* "science are really discussing ethical and political questions" In the above-mentioned *Cahiers internationaux de sociologie* (1990), Claude Javeau "Ethique et technique le vieux debat reste ouvert" takes the view that while modern technology "brings a radical chane in values" it "constantly engenders negotiations by bearers of *ethos*" (technocrats and users) For Michel Henry "La barbarie" (Grasset 1987) the debate is over modern science has no conscience "Science et philosophie pour quoi faire?" (Le Monde-Editions 1990) sets out the texts of a forum presented by Roer Pol Droit but adds little that is new to the discussion

(5) Jacques Ellul "Le bluff technologique" (Hachette 1988)

(6) *These themes are developed in a study published by a working group comprising Catholic* tehologians and captains of nuclear industry "Pour une ethique de l energie nucleaire" (*Les Cahiers de l'Institut catholique de Lyon*, No 22 September 1990) Henri Bergson also analyses the essential role of technical thought as regards the vital principle ("élan vital") and their limits see "Matiere et mémoire" (PUF, 1896) and an analysis of Bergson s philosophy about technology in the work by Jean-Yves Goffi referred to in Note 4 On the cultural rehabilitation of technology based on quite different precets and by a philosopher of decadence see Oswald Spengler "L homme et la technique" (translation published by Gallimard, 1958) On the side of a highly optimistic philosophy of modern industry in association with intellectual values see the work of François Guéry referred to in Note 4 There is also a reference to theological concepts contrasting

development with *progress*, in Blandine Barret-Kriegel in the above-mentioned collective work "Science et philosophie, pour quoi faire?"

(7) This apparent distinction between two types of solidarity was referred to, precisely in the context of radioactive waste by Daniel Allier in the study referred to at the beginning of Note 6

(8) Pierre Lagadec "La civilisation du risque" (Seuil, 1981)

(9) "La question éthique est aujourd'hui plus que jamais une question sociologique", G Balandier in the *Cahiers internationaux de sociologie*, volume 88 (PUF)

(10) Georges Elgozy's pamphlet against the forecasters of the future , "Le bluff du futur" (Calmann-Levy 1974), is not directly concerned with analysing possible technological developments but does provide a number of judicious comments on the unforeseeability of scientific innovation and the "external" factors contributing towards the unpredictability of new technologies and their consequences The genetic epistemology conceived by Jean Piaget is intended to give a better understanding of the development of scientific knowlegde and therefore possibly, of its applications Piaget states that "all creation consists of the gradual transformation of a previously existing structure under the influence of new situations", which is sufficient to indicate the limits of forecasting ability ("Logique et connaissance scientifique", *Encyclopédie de la Pleiade*, 1967)

(11) The reason for this can be very simply summarised as "the desire to cntrol materials is (for man) infinitely stronger than the need for self-control" (Bertrand Gille, in "Histoire des techniques" op cit page 1020)

(12) In a "Collective Opinion" (to be published shortly by the OECD) this Committee confirmed "that safety assessment methods are available today to evaluate adequately the potential long-term radiological impacts of a carefully designed radioactive waste disposal system on humans and the environment" This opinion is hsared by the experts from the European Communities and the International Atomic Energy Agency

(13) Concerning this concept of the relationship between law and ethics, see Georges del Vecchio "Philosophie du droit" (Dalloz 1955) Michel Villey "Philosophie du droit" (Dalloz, 1982) refers to the various theories which have dealt with this topic while rejecting the "positivist neutrality" of law with regard to ethics, he defines the objectives and resources of the law demonstrating that it should not be considered either as a "branch" or an "annex" of ethics

(14) Questions such as the legal scope of deontological codes, rules of art or technical standards are not dealt with here since they are not directly related to the subject concerned even though relevant to the relationship between law and technology

(15) Michel Serres "Le contrat naturel" (Editions François Bourin, 1990)

(16) With regard to the new scope of today s scientific policies, see the above-mentioned work by Jean-Jacques Salomon

(17) Any analysis of the problem concerned based on the *legal* concept of liability would, in cases where there is neither actual or imminent damage or a contract naturally give rise to fictions of no interest

(18) For an analysis of relevant legislation, see "Long-Term Management of Radioactive Waste - Legal, Administrative and Financial Aspects" (NEA/OECD 1984) and a more recent monograph in *Nuclear Inter Jura 89*, Tokyo (Session V) on international aspects, Leigh Hancher "Radioactive Waste Disposal An International Legal Perspective" also in this latter publication

(19) On the issue of the durability of institutional mechanisms, see Pierre Strohl "Legal Administrative and Financial Aspects of Long-Term Management of Radioactive Waste" (*NLB* No 21 1978) and the NEA/OECD publication referred to in Note 18 page 35 On this occasion the continued effectiveness of institutional controls considered useful (but not necessary) for safety after closure of the repository during a maximum period of 100 to 300 years, was put forward as a reasonable hypothesis

NON-PROLIFERATION TREATY 1990 REVIEW CONFERENCE: LOOKING TOWARDS 1995

by Laura Rockwood*
International Atomic Energy Agency

This article offers a detailed analysis of the Fourth NPT Review Conference The Conference reached agreement on most items on its agenda, but not on the dual problem of a nuclear test ban and extension of the Treaty. It was nonetheless able to achieve its real objective - a thorough review of the conditions of operation of the Treaty and the IAEA Safeguards in the last five years.

> "Five years after entry into force of this Treaty[1], a Conference of Parties to the Treaty shall be held in Geneva, Switzerland in order to review the operation of this Treaty with a view to assuring that the purposes of the Preamble and the provisions of the Treaty are being realised At intervals of five years thereafter, a majority of the Parties to the Treaty may obtain, by submitting a proposal to this effect to the Depositary Governments, the convening of further conferences with the same objective of reviewing the operation of the Treaty" [Article VIII 3]

Introduction

As requested by the States Party at the Third Review Conference in 1985, the Fourth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (the NPT or the Treaty) opened in Geneva on 20th August 1990 Eighty-four States took part in the Conference which ended on 14th September 1990 The Conference was convened amid an atmosphere of optimism reflecting the positive developments in East-West relations and confidence in the outcome of the Conference, tempered by growing concern over the rapidly deteriorating situation in the Persian Gulf[2] and a sense that the issue of a comprehensive nuclear test ban was gaining momentum[3]

---

* Laura Rockwood took part in this NPT Review Conference as Legal Officer in the Legal Division of the IAEA Responsibility for the ideas expressed and the facts given rests solely with the author

I Organisation of the Conference

In accordance with Resolution 43/42 passed by the United Nations General Assembly, the administrative and operational details, as well as the substantive organisation of the Conference, had been worked out during the preceding year and a half by a Preparatory Committee The Committee had met three times, first in New York and subsequently in Geneva

At its opening session, the Conference elected by acclamation as its President Ambassador de Rivero (Peru) and, as its Secretary-General, the United Nations Secretary General's nominee, Mr Arpad Prandler (Hungary) The Chairman and Vice Chairmen nominated by the Preparatory Committee for the three Main Committees, the Drafting Committee and the Credentials Committee were also unanimously elected The Rules of Procedure, the Conference agenda and the allocation of agenda items to the Main Committees as proposed by the Preparatory Committee were all adopted The substantive review of the Treaty was assigned as follows

Main Committee I (Chaired by Ambassador Adeyemi of Nigeria)	Non-proliferation, disarmament and international peace and security (Articles I and II and preambular paragraphs 1-3, Article VI and preambular paragraphs 8-12, Article VII), and security assurances (UNSC Res 255, effective arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons, the Nigerian proposal)
Main Committee II (Chaired by Ambassador Strulak of Poland)	Non-proliferation, safeguards and nuclear-weapon-free zones (Article III and preambular paragraphs 4-5 especially in relationship with Article IV and preambular paragraphs 6-7, Articles I and II and preambular paragraphs 1-3 in relation to Articles III and IV, Article VII), other provisions of the Treaty, and the role of the Treaty in promotion of non-proliferation of nuclear weapons and of nuclear disarmament and in strengthening international peace and security (acceptance of the Treaty by States and measures aimed at promoting wider acceptance of the Treaty)
Main Committee III (Chaired by Ambassador Yamada of Japan)	Peaceful applications of nuclear energy (Articles IV and III(3) and preambular paragraphs 6-7, especially in relation to Article III(1), (2), (4) and preambular paragraphs 4 and 5 as well as Articles I and II), role of the Treaty in promotion of non-proliferation of nuclear weapons and of nuclear disarmament and in strengthening international peace and security (acceptance of the Treaty by States and measures aimed at promoting wider acceptance of the Treaty)

The first week of plenary sessions ran smoothly, with no objections being raised to the seating as observers the State of Israel or the Palestine Liberation Organisation (as the national liberation organisation), with the non-appearance of the two Cambodias vying for recognition, and with only a few shots launched across the bow of the Iraqi delegation for their Government's invasion of Kuwait There appeared to be an unspoken consensus on restricting political issues to those arising from the subject at hand

A highlight of the plenary sessions was the delivery by Hans-Dietrich Genscher, the Vice-Chancellor and Foreign Minister of the Federal Republic of Germany, of an extensive statement on the significance of the NPT, including the enunciation of a new nuclear export policy[4], and the joint statement by both Germanies on the role of non-proliferation in the policies of a united Germany

On Friday, 24th August, the discussions in the Main Committees began

II The Work of the Conference

A Accomplishments within the Committees

Committee III

Main Committee III, where the focus was on the peaceful uses of nuclear energy in the context of Article IV[5], considered issues related to technical assistance in the development and promotion of nuclear energy, nuclear safety, radioactive waste management, attacks on nuclear facilities and peaceful nuclear explosions[6], as well as promotion of the universality of the Treaty

The Committee was able to reach consensus on reaffirming the value of the NPT in providing a framework within which the development of the peaceful uses of nuclear energy can take place It urged preferential treatment in all activities designed to promote the peaceful uses of nuclear energy for those non-nuclear-weapon States Party to the Treaty which had concluded the required safeguards agreements The Committee stressed the fundamental importance of ensuring the highest standards of nuclear safety and of increasing attention to nuclear safety and radiological protection in nuclear co-operation under the NPT In doing so, it also expressed its deepest sympathy for the victims of the 1986 Chernobyl accident, and commended the International Atomic Energy Agency (IAEA) for its role in the Post-Accident Review held at the IAEA and in the conclusion in 1986 and entry into force of the Convention on Early Notification of a Nuclear Accident and of the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency The IAEA was also encouraged to strengthen further its activities in nuclear waste management

Main Committee III report also commended the IAEA and the OECD Nuclear Energy Agency for their assistance in further improving the international regime for liability in the event of nuclear damage, in particular in the conclusion in 1988 of a Joint Protocol establishing a link between the Vienna and Paris Conventions on Nuclear Civil Liability

Main Committee III also agreed on extensive language concerning technical assistance and co-operation in power and non-power uses of nuclear energy While expressing its appreciation for the IAEA's assistance in non-power uses (e g , agriculture, medicine, hydrology, food preservation) it called upon the IAEA to strengthen its assistance in the power sector In this context, significant emphasis was placed on ensuring adequate financing for such projects through the IAEA's Technical Assistance and Co-operation Fund

Main Committee III considered as well the issue of attacks on nuclear facilities devoted to peaceful purposes In recognising that such attacks could result in large releases of radioactivity with potentially grave consequences, it appealed to all States to take this into account when reviewing their military doctrines The Conference further noted calls upon States to become party to the 1977 First Additional Protocol to the 1949 Geneva Convention and to improve the present regime with regard to the protection of nuclear facilities

In the context of Article V of the NPT, which provides for the availability to non-nuclear-weapon States of the potential benefits from the peaceful applications of nuclear explosions, the Committee proposed language noting that the potential for such applications had not been sufficiently demonstrated It further noted that no nuclear-weapon State[7] had an active programme for the peaceful uses of nuclear explosions

With respect to promotion of the universality of the Treaty, the Committee agreed on language underlining the necessity of strict compliance by all existing Parties with their obligations under the Treaty and the value of informal dialogue between States Party to the NPT and non-parties

While Main Committee III was able to reach consensus on a text reflecting its review of the operation of Articles IV and V of the NPT within the deadline set by the Conference, it withheld formal adoption of its report to the Drafting Committee pending resolution of negotiations on how to characterise the nuclear capabilities of non-nuclear-weapon States not Party to the Treaty[8] This issue was finally resolved in the Drafting Committee by agreement on language which, while specifically mentioning South Africa and Israel, noted that any unsafeguarded nuclear programmes of non-nuclear-weapon States not party to the NPT represented a threat to the peaceful uses of nuclear energy under Article IV of the Treaty

Committee II

Main Committee II, which focused predominantly on safeguards, was able to reach consensus on almost all of the text related to Article III of the Treaty Article III, inter alia, obligates each non-nuclear-weapon State Party to the NPT to conclude agreements with the IAEA for the application of safeguards to source and special fissionable material in that State's peaceful nuclear activities within six months of their adherence to the Treaty It further obliges all States Party not to provide to any non-nuclear-weapon State source or special fissionable material, or equipment or material especially, designed or prepared for the processing, use or production of special

Unanimous expression of support was voiced for the work of the IAEA in the implementation of its safeguards, along with concerns about the impact of the continuing mandate of "zero real growth" budgeting on the adequacy of human and technical resources of the IAEA The Committee encouraged that particular attention be paid to the safeguarding of the new large and complex facilities due to come on-line in the not too distant future, in particular, reprocessing plants and plutonium-uranium mixed-oxide fuel fabrication plants

The language agreed in Committee II reaffirmed the conviction that IAEA safeguards, as a fundamental element of the Treaty, play a key role in preventing the proliferation of nuclear weapons and other nuclear explosive devices It called for the universal application of IAEA safeguards to all peaceful nuclear activities in all States

In addition, nuclear-weapon States were urged to make substantial progress toward the strict separation of civil and military nuclear programmes and it was suggested that nuclear material to be retired from weapons use could be subject to safeguards under the nuclear-weapon States' safeguards agreements with the IAEA[9] Concomitantly, the IAEA was invited to look into the means for expanding safeguards in nuclear-weapon States with specific reference to full reporting and verification based on randomisation.

Significant progress was achieved in agreement on language urging suppliers to require full-scope safeguards, that is, safeguards on all of a State's peaceful nuclear activities, as a condition for the transfer of "relevant nuclear supplies under new supply arrangements" This reflected the significant efforts of certain States, in particular the Netherlands and Australia, to find stronger language than had been agreed in the previous review conference on conditions for nuclear supplies These efforts were greatly enhanced by Germany's announcement in the plenary that it would henceforth require full-scope safeguards as a condition for all new and significant supply of nuclear material, equipment and technology, and to confirm within five years their existing supply arrangements to this policy

The Committee also agreed to language which would welcome a study by the IAEA of the possible scope, application and procedures for special inspections in NPT-safeguarded States where uncertainty existed about whether a State had conformed to the purpose of the NPT and, in particular, had declared to the IAEA all nuclear material required to be subject to safeguards This might have been prompted by recent speculation reflected in the press as to undeclared nuclear activities in the Democratic People's Republic of Korea (DPRK)[10] and to attempts by Iraq to secure material and equipment considered sensitive from the point of view of nuclear weapons development[11]

The Committee, which in agreement with the Chairman of Main Committee I took the lead on issues related to Article VII[12], expressed strong support for the establishment of nuclear-weapon-free zones freely arrived at among the States of the regions concerned as an important disarmament measure Proposals for the creation of such zones in Africa, the Middle East and South East Asia were widely endorsed by the Committee and the valuable role of existing zones in Latin America, the South Pacific and Antarctica was recognised However, agreement on specific references to South Africa and Israel was not achieved during the Main Committee sessions The issue was ultimately resolved in the Drafting Committee with language calling upon South Africa to accede to the

NPT, and upon all States Party directly concerned to take the necessary steps to establish a nuclear-weapon free zone in that region, and calling upon Israel and all other non-NPT Parties in the Middle East to accede to the Treaty as soon as possible

Under the heading "Other Provisions", Main Committee II considered, at the end of the third week, Article X of the NPT concerning, not the substance of extension issues, but rather the procedural aspects of the convening of the twenty-five year extension conference in 1995[13] As the next five-year review of the Treaty would coincide with the timing for the extension conference, there seemed to be agreement that a single review/extension conference should be held, although there was a difference of opinion as to where it should be held and when the Preparatory Committee for the 1995 conference should commence its work The discussion came to a standstill, however, on a proposal by Mexico linking extension of the NPT with Article VI In the light of the parallel and related substantive negotiations being held in Main Committee I, Committee II simply referred the issue to the Drafting Committee which, as by that time had become clear, would be asked to resolve the major outstanding political issues

Committee I

Main Committee I was able to reach provisional agreement on a number of paragraphs concerning Articles I and II of the Treaty, acknowledging declarations by the nuclear-weapon and non-nuclear-weapon States that they had fulfilled their obligations under those Articles It welcomed the positive developments in the international situation since the last Review Conference, especially in the East-West context and in the relations between the Soviet Union and the United States It also noted with satisfaction the joint declaration of the Federal Republic of Germany and the German Democratic Republic that the united Germany would abide by the obligations under the NPT and seek the continuing validity of the NPT beyond 1995 The Committee also reiterated that any further detonation of a nuclear explosive device by any non-nuclear-weapon State would constitute a most serious breach of the non-proliferation objective

Main Committee I also considered at length, but was unable to resolve, the question of security assurances The issue of security assurances stems from the very origins of the NPT At the urging of the non-nuclear-weapon States, and as a trade-off for such States' having forsworn nuclear weapons, the United Nations Security Council in 1968 adopted Resolution 255 welcoming the NPT Depositary States' "positive security assurances" to come to the aid of any non-nuclear-weapon State Party to the Treaty that was a victim of an act or an object of a threat of aggression in which nuclear weapons are used However, many non-nuclear-weapon States criticised this assurance as providing nothing more than that already required under the United Nations Charter Assurances, it was argued, against the use or the threat of use were also necessary to avoid a sense of military insecurity on the part of non-nuclear-weapon States which might provoke such States to reserve or exercise their right to develop nuclear weapons as a national security measure In this light, at the 1978 United Nations Special Session on Disarmament all five of the nuclear-weapon States made unilateral declarations of "negative security assurances" to refrain from the use or threat of use of nuclear

weapons against non-nuclear-weapon States, the terms of which varied among the individual declarations

During the Preparatory Committee meetings for the 1990 NPT Review Conference, Nigeria had submitted for consideration by the Conference a proposed international agreement on the prohibition of the use or threat of use of nuclear weapons against non-nuclear-weapon States Party to the NPT, which called, inter alia, for a diplomatic conference to be convened not later than 1992 to conclude a legally-binding instrument to the effect proposed in their text Egypt, on the other hand, submitted proposed wording providing greater specificity with respect to positive security assurances While significant progress was made in agreement on text concerning security assurances, the report to the Drafting Committee indicated remaining differences of opinion as to how precisely the Nigerian and Egyptian proposals could be incorporated

The major stumbling block to consensus within Main Committee I, and, indeed, to agreement on a Final Document on the operation of the Treaty, turned out to be language on linkage of extension of the NPT in 1995 with a comprehensive nuclear test ban

Article X 2 of the NPT provides that, twenty-five years after the entry into force of the Treaty, a conference shall be convened to decide, by a majority of the States Party, whether the Treaty shall continue in force indefinitely or for a fixed period or periods While many States Parties are of the view that the NPT will continue in force until such action is taken, that is, absent agreement by all the Parties, it cannot expire of its own accord, draft language submitted by the Mexican delegation would have conditioned a significant extension of the NPT on the nuclear-weapon States "beginning to meet their obligations under Article VI" Article VI of the Treaty provides that

> "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control "

The position of some of the non-aligned States at the Conference was that fulfilment of the obligations under Article VI required the conclusion of a comprehensive nuclear test ban, a proposition opposed by other States, in particular the United States and the United Kingdom It is significant to note, however, that, while many States other than the non-aligned, including the Soviet Union, expressed strong interest in the conclusion of a comprehensive ban on nuclear testing, very few supported linkage of a comprehensive nuclear test ban treaty with extension of the NPT

Due to the lack of consensus on Article VI and the linkage issue, Main Committee I was unable by the end of the third week to reach formal agreement on any text However, it did agree to forward to the Drafting Committee a draft text on Article VI which had been prepared at the end of the third week by the Chairman of Main Committee I, Ambassador Adeyemi, in an effort to forge consensus on Article VI

Drafting Committee

The Drafting Committee, chaired by Ambassador Hyltenius of Sweden, convened formally on Monday of the last week and moved quickly to accept the report of Main Committee III, resolving the outstanding issues on Articles IV and V discussed above It was also able to reach agreement in an informal working group on the few remaining issues concerning Articles III and VII in the report of Main Committee II However, as no consensus could be reached on Article X it was once again referred back to the Drafting Committee as a whole and taken up in conjunction with its negotiation of the text concerning Article VI

From Main Committee I, the Drafting Committee had before it the provisional texts of Articles I and II, texts on security assurances and the Adeyemi draft on Article VI Most of the language on Articles I and II was eventually agreed to in the Drafting Committee By the end of the Conference provisional agreement had been reached between the Depositaries and Nigeria and Egypt concerning security assurances, recognising the need placed on effective international arrangements, which could include an internationally legally binding instrument, to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons The provisional text further noted the Nigerian proposal for such an instrument, supporting the objective of assuring the security of non-nuclear-weapon States Party to the Treaty against the use or threat of use of nuclear weapons and noting the readiness of all delegations to undertake further work on the substance of the issue However, due to the lack of time and the impasse developing on Article VI, the text on security assurances was not presented formally to the Conference

While informal consensus was reached on many of the paragraphs of the Adeyemi draft on Article VI, the text on extension, linkage and a comprehensive test ban remained unresolved notwithstanding a marathon negotiation session at the Swedish embassy on the eve of the final day of the Conference, and a last-minute compromise text offered by the President of the Conference As a consequence, the Fourth NPT Review Conference was unable to reach consensus on a Final Document which would include the results of its review of the operation of the NPT[14]

B The achievements of the Conference

Notwithstanding its failure to reach consensus on the substantive aspects of a Final Document, the Conference was not only able to achieve its real objective - a thorough review of the operation of the Treaty in the last five years - but it also provided the participating States Party an opportunity for a frank and extensive exchange of views, including expressions of concern and disagreement, in terms that the Parties might not be willing to risk emphasising at the time of the extension conference in 1995 While many States supported the proposition that a comprehensive nuclear test ban by 1995 would go a long way to resolving some of its difficulties, very few wished to see the extension of the Treaty conditioned on the conclusion of a comprehensive nuclear test ban treaty

In addition, the unprecedented attendance by fifteen States not party to the NPT, notably the two remaining nuclear-weapon States[15] and several developing countries with major nuclear programmes[16], as well as forty-three non-governmental organisations active in non-proliferation and disarmament issues, underscored the significance of the NPT to the global regime of non-proliferation

III Prognosis 1990-1995

Between 1990 and 1995, it may be expected that proposals for protocols or other instruments related to the implementation and/or expansion of the NPT intended to "complement" the NPT, such as the Nigerian proposal for a treaty on negative security assurances, rather than explicitly to amend it, will be floated not only by States Party to the Treaty, but non-parties as well However, the 1990 Conference evidenced the broad-based consensus that the NPT has served effectively for over twenty years as the cornerstone of the international regime of non-proliferation, and the sense that the NPT, although older now and operating in a political climate significantly different from that prevailing in 1968-1970, has matured through implementation and interpretation In addition, the procedures for amending the NPT are quite onerous Consequently, political and practical reality make amendment of the NPT itself unlikely

The above notwithstanding, it may equally be expected that considerable pressure will be brought to bear on the States Party to condition, either explicitly or implicitly, long term extension(s) of the Treaty on rapid and substantive developments in the area of nuclear arms control and disarmament on the part of the nuclear-weapon States

In this context, the issue of a comprehensive nuclear test ban can be expected to continue to play a significant role in the build-up to the extension conference in 1995 Barring a significant policy turn-around by the major players, or movement in that direction, this issue could well make the next conference a bit rocky However, given the implications of non-extension of the NPT (e.g , unless special arrangements were made, the possible termination of over forty safeguards agreements concluded with the IAEA pursuant to the Treaty), the value placed on the undertakings by the nuclear-weapon and non-nuclear-weapon States Party to the NPT, and the success of the Treaty in limiting the horizontal proliferation of nuclear weapons and in applying pressure against vertical proliferation, a reaffirmation of the continuing validity and vitality of the NPT and a significant extension of the Treaty may reasonably be expected in 1995

NOTES AND REFERENCES

1 The Treaty on the Non-Proliferation of Nuclear Weapons entered into force on 5th March 1970 The text is reproduced in the Appendix

2 Iraq invaded Kuwait on 2nd August 1990

3 At the initiation of the Governments of Mexico, Peru, Indonesia, Sri Lanka, Yugoslavia and Venezuela, the required one-third of the Parties to the Treaty banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water (PTBT) had pressed the Depositary Governments (United Kingdom, United States, Soviet Union) for a conference to take place before the NPT Review Conference to consider the transformation of the PTBT into a comprehensive test ban treaty However, as a result of a compromise, it was agreed that an organisational meeting would be held in New York in June 1990, and that the substantive sessions of the conference would be held between 7th and 18th January 1991

4 See discussion, infra, on full-scope safeguards

5 Article IV acknowledges the inalienable right of States Party to develop research, production and use of nuclear energy for peaceful purposes and commits all States Party to facilitate the fullest possible exchange of equipment, materials and technology for the peaceful uses of nuclear energy

6 Article V of the NPT provides for the availability to non-nuclear-weapon States of the potential benefits from the peaceful applications of nuclear explosions under specific conditions

7 Article IX 3 provides that a nuclear-weapon State is one which had manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1st January 1967 Three of these five States, the United Kingdom, the United States and the Soviet Union, are Party to the NPT, the other two, China and France, are not

8 In 1985, the Final Document of the Third Review Conference had mentioned only South Africa and Israel

9 Although not required by the Treaty, all three nuclear-weapon States Party to it have concluded agreements with the IAEA for the safeguarding of some or all of their civil nuclear activities

10 The DPRK (North Korea - note by Editor) adhered to the NPT in 1985, but has not yet concluded a safeguards agreement with the IAEA Articles in the press have raised questions about the possible existence in the DPRK of a previously undisclosed reactor facility and reprocessing plant Nuclear Fuel, 3rd April 1989, p 5, International Herald Tribune, 10th-11th February 1990

11 Washington Post, 31st March 1989, International Herald Tribune, 1st-2nd April 1989, Sunday Times, 19th August 1990

12 Article VII of the NPT provides that nothing in the Treaty affects the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories

13 See discussion, infra, concerning Main Committee I's consideration of Article VI and comprehensive nuclear test ban

14 This was not unprecedented The Second Review Conference, which took place in 1980, also was unable to agree on such a text

15 People's Republic of China and France

16 The non-nuclear-weapon States not Party to the Treaty who attended were Algeria, Argentina, Brazil, Byelorussian Soviet Socialist Republic, Chile, Cuba, Israel, Myanmar (ex Burma), Oman, Pakistan, United Republic of Tanzania, Ukrainian Soviet Socialist Republic and Zimbabwe

APPENDIX

TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS

The States concluding this Treaty, hereinafter referred to as the "Parties to the Treaty",

Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples,

Believing that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war,

In conformity with resolutions of the United Nations General Assembly calling for the conclusion of an agreement on the prevention of wider dissemination of nuclear weapons,

Undertaking to co-operate in facilitating the application of International Atomic Energy Agency safeguards on peaceful nuclear activities,

Expressing their support for research, development and other efforts to further the application, within the framework of the International Atomic Energy Agency safeguards system, of the principle of safeguarding effectivel, the flow of source and special fissionable materials by use of instruments and other techniques at certain strategic points,

Affirming the principle that the benefits of peaceful applications of nuclear technology, including any technological by-products which may be derived by nuclear-weapon States from the development of nuclear explosive devices, should be available for peaceful purposes to all Parties to the Treaty, whether nuclear-weapon or non-nuclear-weapon States,

Convinced that, in furtherance of this principle, all Parties to the Treaty are entitled to participate in the fullest possible exchange of scientific information for, and to contribute alone or in co-operation with other States to, the further development of the applications of atomic energ, for peaceful purposes

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament,

Urging the co-operation of all States in the attainment of this objective,

Recalling the determination expressed by the Parties to the 1963 Treat, banning nuclear weapons tests in the atmosphere, in outer space and under wate. in its Preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time and to continue negotiations to this end,

Desiring to further the easing of international tension and the strengthening of trust between States in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a Treaty on general and complete disarmament under strict and effective international control,

Recalling that, in accordance with the Charter of the United Nations, States must refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State or in any other manner inconsistent with the Purposes of the United Nations and that the establishment and maintenance of international peace and security are to be promoted with the least diversion for armaments of the world's human and economic resources,

Have agreed as follows

Article I

Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly, and not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices

Article II

Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly, not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices

Article III

1 Each non-nuclear-weapon State Party to the Treaty undertakes to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy Agency and the Agency's safeguard's system, for the exclusive purpose of verification of the fulfilment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices Procedures for the safeguards required by this Article shall be followed with respect to source or special fissionable material whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility The safeguards required by this Article shall be applied

on all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction or carried out under its control anywhere

2 Each State Party to the Treaty undertakes not to provide

a) source or special fissionable material, or

b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this Article

3 The safeguards required by this Article shall be implemented in a manner designed to comply with Article IV of this Treaty, and to avoid hampering the economic or technological development of the Parties or international co-operation in the field of peaceful nuclear activities, including the international exchange of nuclear material and equipment for the processing, use or production of nuclear material for peaceful purposes in accordance with the provisions of this Article and the principle of safeguarding set forth in the Preamble of the Treaty

4 Non-nuclear-weapon States Party to the Treaty shall conclude agreements with the International Atomic Energy Agency to meet the requirements of this Article either individually or together with other States in accordance with the Statute of the International Atomic Energy Agency Negotiation of such agreements shall commence within 180 days from the original entry into force of this Treaty For States depositing their instruments of ratification or accession after the 180-day period, negotiation of such agreements shall commence not later than the date of such deposit Such agreements shall enter into force not later than eighteen months after the date of initiation of negotiations

Article IV

1 Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty

2 All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy Parties to the Treaty in a position to do so shall also co-operate in contributing alone or together with other States or international organisations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world

Article V

Each Party to the Treaty undertakes to take appropriate measures to ensure that, in accordance with this Treaty, under appropriate international observation and through appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear-weapon States Party to the Treaty on a non-discriminatory basis and that the charge to such Parties for the explosive devices used will be as low as possible and exclude any charge for research and development Non-nuclear-weapon States Party to the Treaty shall be able to obtain such benefits, pursuant to a special international agreement or agreements, through an appropriate international body with adequate representation of non-nuclear-weapon States Negotiations on this subject shall commence as soon as possible after the Treaty enters into force Non-nuclear-weapon States Party to the Treaty so desiring may also obtain such benefits pursuant to bilateral agreements

Article VI

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control

Article VII

Nothing in this Treaty affects the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories

Article VIII

1 Any Party to the Treaty may propose amendments to this Treaty The text of any proposed amendment shall be submitted to the Depository Governments which shall circulate it to all Parties to the Treaty Thereupon, if requested to do so by one-third or more of the Parties to the Treaty, the Depository Governments shall convene a conference, to which they shall invite all the Parties to the Treaty, to consider such an amendment

2 Any amendment to this Treaty must be approved by a majority of the votes of all the Parties to the Treaty, including the votes of all nuclear-weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are members of the Board of Governors of the International Atomic Energy Agency The amendment shall enter into force for each Party that deposits its instrument of ratification of the amendment upon the deposit of such instruments of ratification by a majority of all the Parties, including the instruments of ratification of all nuclear-weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are

members of the Board of Governors of the International Atomic Energy Agency Thereafter, it shall enter into force for any other Party upon the deposit of its instrument of ratification of the amendment

3 Five years after the entry into force of this Treaty, a conference of Parties to the Treaty shall be held in Geneva, Switzerland, in order to review the operation of this Treaty with a view to assuring that the purposes of the Preamble and the provisions of the Treaty are being realised At intervals of five years thereafter, a majority of the Parties to the Treaty may obtain, by submitting a proposal to this effect to the Depository Governments, the convening of further conferences with the same objective of reviewing the operation of the Treaty

Article IX

1 This Treaty shall be open to all States for signature Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this Article may accede to it at any time

2 This Treaty shall be subject to ratification by signatory States Instruments of ratification and instruments of accession shall be deposited with the Government of the United Kingdom of Great Britain and Northern Ireland, the Union of Soviet Socialist Republics and the United States of America, which are hereby designated the Depository Governments

3 This Treaty shall enter into force after its ratification by the States, the Governments of which are designated Depositories of the Treaty, and forty other States signatory to this Treaty and the deposit of their instruments of ratification For the purposes of this Treaty, a nuclear-weapon State is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1st January 1967

4 For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession

5 The Depository Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession, the date of the entry into force of this Treaty, and the date of receipt of any requests for convening a conference or other notices

6 This Treaty shall be registered by the Depository Governments pursuant to Article 102 of the Charter of the United Nations

Article X

1 Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardised the supreme interests of its country It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance Such notice shall include a statement of the extraordinary events it regards as having jeopardised its supreme interests

2 Twenty-five years after the entry into force of the Treaty, a conference shall be convened to decide whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods This decision shall be taken by a majority of the Parties to the Treaty

Article XI

This Treaty, the English, Russian, French, Spanish and Chinese texts of which are equally authentic, shall be deposited in the archives of the Depository Governments Duly certified copies of this Treaty shall be transmitted by the Depository Governments to the Governments of the signatory and acceding States

IN WITNESS WHEREOF the undersigned, duly authorised, have signed this Treaty

DONE in triplicate, at the cities of London, Moscow and Washington, the first day of July, one thousand nine hundred and sixty-eight

CASE LAW AND ADMINISTRATIVE DECISIONS

CASE LAW

• *Switzerland*

FEDERAL COURT RULING ON COMPENSATION FOR MARKET-GARDENERS FOLLOWING THE CHERNOBYL DISASTER (1990)*

The Chernobyl disaster of 26th April 1986 caused considerable radioactive precipitations on vast regions in northern and western Europe affecting Switzerland as well

The resulting radioactive contamination did not oblige the Swiss authorities to declare certain foodstuffs as being unsuitable for consumption The Federal Committee for AC Protection (atomic-chemical) and the Federal Office for Public Health issued several recommendations, one of which advising pregnant women, nursing mothers and children less than two years old not to eat products from land cultivation and the rest of the population to wash such products very well prior to consumption

These recommendations, together with the fears generated by the Chernobyl disaster, resulted in consumers' radically changing their attitude to products from land cultivation This change in habits quickly led to a drop in turnover and for some products, to a momentary collapse of the market

As a consequence, a firm of market-gardeners instituted proceedings for damages against the Confederation before the Supreme Court of the Berne Canton on the basis of the Federal Act on Nuclear Third Party Liability - LRCN (RS 732 44) (the text of the Act is reproduced in the Supplement to Nuclear Law Bulletin No 32)

---

* Note kindly prepared by the Legal Service of the Swiss Federal Office for Energy

The Supreme Court of the Berne Canton which has jurisdiction according to Section 24(3) of the LRCN, in a ruling solely on the principle of liability, established the Confederation's liability to the plaintiff (the firm of market-gardeners) following the Chernobyl disaster on the basis of Section 2(1)(a) of the LRCN On appeal to the Federal Court, the high judicial authority in Switzerland, the latter confirmed the ruling of the Supreme Court of the Berne Canton on 21st June 1990

The Swiss Confederation, the defendant contested its liability

For the Confederation, the main question was whether an adequate causal link existed between the radioactive contamination and losses in sales As explained above, vegetables could be eaten without any risk to health provided precautionary measures were observed The Confederation held that lessened consumption was due to the violent reactions of consumers to the recommendations and to information given by the media rather than to radioactive contamination The Federal Court took no account of these arguments

The Federal Court acknowledged the existence of nuclear damage, that is damage caused by the hazardous, namely the radioactive, toxic, explosive or other properties of nuclear substances [Section 2(1)(a) of the LRCN].

This acknowledgement of nuclear damage which includes loss of income enabled the Federal Court to apply Section 16(1)(d) of the LRCN That Section provides that in particular cases, the Confederation covers up to SF 1 billion nuclear damage that has not been caused intentionally by the injured party, where a person who has suffered damage in Switzerland as a result of an occurrence abroad cannot obtain compensation equivalent to that available under the LRCN in the country concerned The Federal judges considered that there was an adequate and unbroken causal link between the nuclear accident, the precipitation of radioactive materials on the market-garden products and the fact that those products became unsaleable

This important ruling of principle led the Confederation to propose negotiations to the market-gardeners with a view to fixing their financial claims The Federal Administration for Finance representing the Confederation and the lawyer representing the market-gardeners are to meet for this purpose.

• United Kingdom

MERLIN AND OTHERS V BRITISH NUCLEAR FUELS PLC - HIGH COURT OF JUSTICE QUEENS BENCH DIVISION - CLAIM FOR COMPENSATION FOR DAMAGE TO REAL PROPERTY (1990)*

Judgment in this case was delivered by Mr Justice Gatehouse on 2nd April 1990 The hearing of the case commenced on 2nd October 1989, the first day of the Michaelmas law term, and continued (with intermissions) until Friday, 8th December 1989, when judgment was reserved

In accordance with the usual practice in cases of this sort the parties exchanged written evidence of their scientific expert witnesses (see Annex I)

In the event a plaintiffs' witness, Dr Russell-Jones did not give evidence in court following a ruling by the Judge on the admissibility of his evidence Of the defendant's witnesses, Professor Fabrikant was not called to give evidence following a decision by the defence lawyers The documents produced in the case (mainly, but not exclusively, scientific reports and publications) occupied approximately 50 large looseleaf binders The verbatim transcript of the court proceedings was similarly voluminous The judgment itself occupied more than 60 pages of typescript

The plaintiffs were Christopher Peter Merlin, his wife Christine Anne Merlin and their two children Sam Oliver Merlin and Ben Harris Merlin The plaintiffs' claim was for compensation for damage to their real property consisting principally of their dwelling house, Mountain Ash, situated on the Ravenglass Estuary on the coast of Cumbria south of the British Nuclear Fuels plc (BNF) Sellafield installation

The claim was originally framed under Section 7 of the Nuclear Installations Act 1965, and in the alternative under common law, but the latter head of claim was not pressed

The gist was that radionuclides from Sellafield waste discharges translocated into the plaintiffs' house from silt and mud in the estuary where they were deposited by the action of such natural agents as the tide and the wind Thence they were carried into the house either on the wind or on human feet and on the paws of pet animals It was suggested that the presence of contamination in the form of these radionuclides constituted damage to property contrary to the statute and that the plaintiffs suffered loss in the value of their dwelling house in consequence

It was not disputed that measurable quantities of radionuclides had been found in the dwelling house Mountain Ash and that their source was the Sellafield marine pipeline which discharges liquid nuclear waste into the Irish Sea off the coast near Sellafield

---

* This Note has kindly been prepared by Mr Donald Grazebrook, Legal Consultant, United Kingdom Atomic Energy Authority

The plaintiffs became concerned about the presence of radioactive contamination in the house and attendant health risks They therefore decided to sell the property and eventually did so at what they considered to be a substantial reduction in value attributable to the presence of the radioactive contamination

Dismissing the case, the Judge held that radioactive contamination by itself did not amount to "damage to any property" within the meaning of that expression as used in Section 7 of the 1965 Act The expression is not defined in the Act but in the Judge's view it refers to physical damage to tangible property

Nuclear installations must inevitably involve some increment in the radioactivity present in the area The mere presence of such activity without physical damage does not constitute a breach of the licensee's statutory duty The 1965 Act does not afford a remedy by way of compensation for purely economic loss which is not compensatable under the common law [Paris Convention, Article 11, Vienna Convention, Article I(1)(k)(i) - reproduced in Annex II]

The judgment dealing with the legal reasons for dismissing the case contains the following passages

> "I reject the argument that contamination of the plaintiffs' house per se amounts to damage to their property All that such contamination as was admitted in this case amounts to is some increased risk to the health of its occupants The Act compensates for proved personal injury, not the risk of future personal injury
>
> "For there to be a breach of statutory duty, carrying with it a right to compensation, the plaintiff must establish that he has suffered injury or damage to his property caused - and I underline the word - caused by either an occurrence involving nuclear matter, Section 7(1)(a), or an emission of ionizing radiations on or from the site - Section 7(1)(b) [reproduced in Annex II]
>
> "Although there was some dispute as to whether the present facts fell within (a) as well as (b), I am satisfied that this is a paragraph (b)(ii) case, but it does not appear to matter, in either case there must be cause and effect The mere presence of ionizing radiations within the plaintiffs' property emitted from waste discharged from the site, is not enough to constitute a breach of statutory duty There must be consequential damage The radionuclides with which this case is concerned - plutonium isotopes and americium - are alpha emitters These cannot do any significant damage to persons or property externally, but when inhaled, ingested or otherwise enabled to enter the body they may induce cancers but, of course, will not necessarily do so The presence of alpha emitting radionuclides in the human airways or digestive tracts or even in the bloodstream merely increases the risk of cancer to which everyone is exposed from both natural and artificial radioactive source They do not per se amount to injury

"I therefore conclude that the facts of this case do not disclose any breach of duty by the defendants and the action must fail on that ground"

Continuing his judgment the Judge dealt with his findings of fact as he put it in case "I am wrong over the construction of the Statute and the plaintiffs' claim qualifies for compensation" The first finding of fact involved the question of causation The special items of loss which figured in the claim were alleged to rise as a consequence of the plaintiffs' decision to move from the dwelling house because of the radioactive contamination It had been argued in the case that their decision was not prompted by this motive but was wholly, or at least, mainly due to financial considerations The Judge took the view that there were formidable arguments that extraneous financial considerations may have had some bearing on the matter but he came to the conclusion on the balance of probability that Mr Merlin's evidence should be accepted that the principal reason for deciding to leave Mountain Ash was long-term fear for the children's safety.

Secondly as to the amount of damage the first claim related to the difference between the sale of the house at auction in December 1984 and the valuation of the house in an uncontaminated state in February 1984 (the amounts involved were respectively £35 500 and £59 000) The Judge rejected the latter figure and relied upon another figure of £53 100, but that figure was subject to a deduction for the value of a building plot which was excluded from the eventual sale By this process of reasoning the Judge put the head of loss as £13 500 The Judge rejected other heads of loss such as loss of income from other property and removal expenses, but accepted the legal costs attendant on the sale and purchase transactions. In the Judge's view the total recoverable amount of special damage, had the plaintiffs been entitled to succeed, would have been £16 602 The Judge went on to disallow any amount for general damages in respect of annoyance and inconvenience on the basis that the case did not fall within any recognised category for which such damages could be awarded

Finally, looking at the factual evidence with regard to the alleged health risks the Judge posed the question "what in truth was the extent of any increased risk of health resulting from the pleaded levels of radioactivity found in Mountain Ash?"

After reviewing the evidence given by the plaintiffs' and defendant's witnesses the Judge summarised his findings of fact of this aspect of the case in the following terms:

"I am wholly unpersuaded that the actual increased risk in Mountain Ash resulting from the level of radionuclides found there and emanating from Sellafield, was anything other than trivial"

There was no appeal and the time alloved in which to do so has nov expired.

ANNEX I

Plaintiffs' Expert Witnesses

1 Professor Edward P Radford, Epidemiologist, Pittsburg University and former holder of other distinguished appointments

2. Dr K Z. Morgan, Health Physicist, former Director of Health Physics Division, Oak Ridge National Laboratory, and former holder of other distinguished appointments.

3 Dr J P Day, Senior Lecturer in Chemistry, Manchester University

4 Dr R Russell-Jones, Consultant Dermatologist and Chairman of the Pollution Advisory Committee, Friends of the Earth

5. Mr. Russell Gourlay, Chartered Surveyor

Defendant's Expert Witnesses

6 Dr S R Jones, Head of Environmental Protection Division, BNF plc

7 Ms Frances Fry, Head of Measurements Branch, National Radiological Protection Board (NRPB)

8 Mr Geoffrey Webb, Secretary, NRPB

9 Professor Ian Thornton, Chairman, Centre for Environmental Technology, Imperial College University of London

10 Professor A J H Goddard, Professor of Environmental Safety, Imperial College University of London

11 Professor J Fabrikant, Professor of Radiology, University of California School of Medicine

12 Dr D C Phillips, Deputy Head, Polymers and Composite Material Group, UKAEA Harwell Laboratory

13 Dr A C James, Group Leader, Inhalation and Internal Dosimetry, Battelle Pacific North West Laboratory

14 Mr Richard, Epidemiologist, Consultant, NRPB and former holder of other distinguished appointments

15 Mr John Langton, Rating and Valuation Consultant

ANNEX II

Paris Convention

Article 11

"The nature, form and extent of the compensation, within the limits of this Convention, as well as the equitable distribution thereof, shall be governed by national law "

Vienna Convention

"Article I(1) .

(k) 'Nuclear damage' means -

(i) loss of life, any personal injury or any loss of, or damage to, property which arises out of or results from the radioactive properties or a combination of radioactive properties with toxic, explosive or other hazardous properties of nuclear fuel or radioactive products or waste in, or of nuclear material coming from, originating in, or sent to, a nuclear installation, "

United Kingdom Nuclear Installations Act, 1965

"Duty of licensee, etc , in respect of nuclear occurrences

7 (1) Where a nuclear site licence has been granted in respect of any site, it shall be the duty of the licensee to secure that -

(a) no such occurrence involving nuclear matter as is mentioned in subsection (2) of this section causes injury to any person or damage to any property of any person other than the licensee, being injury or damage arising out of or resulting from the radioactive properties, or a combination of those and any toxic, explosive or other hazardous properties, of that nuclear matter, and

(b) no such ionizing radiations emitted during the period of the licensee's responsibility -

(i) from anything caused or suffered by the licensee to be on the site which is not nuclear matter, or

(ii) from any waste discharged (in whatever form) on or from the site,

cause injury to any person or damage to any property of any person other than the licensee."

ADMINISTRATIVE DECISIONS

• Switzerland

APPLICATION FOR A GENERAL LICENCE FOR AN INTERIM CENTRAL RADIOACTIVE WASTE REPOSITORY (1990)*

On 16th July 1990, the Zwilag Zwischenlager Wurenlingen Company SA submitted to the Federal Council (the Government) an application for a general licence to construct interim storage buildings for irradiated fuel elements and all types of radioactive waste, as well as new facilities for the processing of low and medium level waste at Wurenlingen in the Canton of Argau.

The procedure for the licence application is governed by the Federal Order concerning the Atomic Energy Act (RS 732 01) (the text of the Order is reproduced in Nuclear Law Bulletin No 23, see also Nuclear Law Bulletin Nos 29 and 31) Therefore, if the Government decides in its favour, granting of the licence is subject to approval by the Federal Assembly (Parliament)

In accordance with Section 3 of the Federal Order, the general licence must be refused or be subject to appropriate conditions and duties where

- this is required for safeguarding Switzerland's external security, fulfilling its international commitments or protecting persons, the property of other persons and important rights, including the protection of vested interests in safeguarding the environment, nature, landscapes and land planning,

---

* Note kindly prepared by the Legal Service of the Swiss Federal Office for Energy

- the installation concerned is not likely to meet a real need in the country

In support of its application the Company submitted a document establishing proof of need, a technical report and a report on the repository's environmental impact

Once the application and its Annexes are submitted, the Federal Administration publishes the application in the Federal Gazette (Feuille federale) and makes the documents available to the public Any person may lodge an objection in writing with the Federal Chancellery regarding the granting of the general licence, within ninety days of publication In parallel with this consultation, the Federal Council asks the cantons and the appropriate specialised services for their opinion The cantons must also consult the communes concerned, and will give the latters' views in their replies

The Federal Council requests the expert advice of the Principal Nuclear Safety Division (DSN) and the Federal Commission for the Safety of Nuclear Installations (CSA) As a general rule, the applicant bears the cost of the expert advice The Federal Council then publishes the conclusions given in the opinions and expert reports in the Federal Gazette It then makes available for public consultation the opinions and expert reports, except for those parts which should be kept secret Any person may then lodge an objection in writing with the Federal Chancellery regarding the conclusions given in the opinions and expert reports, within ninety days of publication This same right is granted to the cantons and communes concerned Finally, the Federal Council invites the cantons, the Federal Services and the Experts to give their views on the objections to their conclusions Following perusal of the application, the opinions, the expert reports and the objections lodged, the Federal Council takes a decision Approximately 24 months elapse between filing of the application and the Federal Council's decision The decision to grant the general licence is published in the Federal Gazette with information on the conditions and charges as well as an explanatory report, and submitted for approval to the Federal Assembly

NATIONAL LEGISLATIVE AND REGULATORY ACTIVITIES

• *Brazil*

ORGANISATION AND STRUCTURE

Asssignment of competence in the nuclear field (1990)

Under a series of legislative and regulatory texts adopted in 1990, nuclear activities are henceforth placed under the authority of the President of the Republic

Decree No 99 194 of 27th March 1990, published in the Official Gazette (Diario Oficial) of 28th March 1990, set up a Working Group made up of representatives of various Ministries, the National Nuclear Energy Commission (CNEN) and companies with nuclear activities The Group's task was to study, within a period of two months, the status of the national nuclear programme This work involved

- assessing the general and specific objectives of the programme,
- assessing the need to alter the structures of the CNEN,
- ascertaining that development of the nuclear programme was compatible with preserving the country's ecological balance

Subsequently, two further texts were adopted, Act No 8 028 of 12th April 1990 (published in the Diario Oficial of 13th April 1990) and Decree No 99 244 of 10th May 1990 (published in the Diario Oficial of 11th May 1990 providing for the reorganisation and the functions of the different bodies under the Presidency of the Republic and the different Ministries In the context of this reorganisation, the Ministry responsible for Capital Equipment is the competent authority for electrical power, including nuclear power The High Council for Nuclear Policy (CSPN), set up by Decree No 99 620 of 31st August 1988 (see Nuclear Law Bulletin No. 43) has been abolished.

The Secretariat of Strategic Affairs, under the Presidency of the Republic, is responsible for formulating and co-ordinating the national nuclear policy and also supervises its implementation Decree No 99 373 of 4th July 1990 (published in the Diario Oficial of 5th July 1990) determines the structure and duties of the Secretariat of Strategic Affairs Henceforth, the Secretariat of Strategic Affairs is the CNEN's supervisory authority

ENVIRONMENTAL PROTECTION

Decree on the national environmental policy, ecological areas and environmentally protected areas (1990)

Decree No 99 274 of 6th June 1990 (published in the Diario Oficial of 7th June 1990) was made in pursuance of Act No 6 902 of 27th April 1981 on the creation of ecological and environmentally protected areas and Act No 6 938 of 31st August 1981 on the national environmental policy as amended (see Nuclear Law Bulletin Nos 29 and 44) The Decree concerns, inter alia, the assignment of responsibilities for the enforcement of the national environmental policy, namely regarding licensing and inspection of various activities using natural resources The CNEN is the licensing authority for nuclear installations, it obtains the opinion of the Brazilian Institute for the Environment and Natural Resources (IBAMA) and the federal and municipal authorities for environmental control

RADIOACTIVE WASTE MANAGEMENT

Bill on radioactive waste repositories (1989)

Bill No 294 of 1989 of the Senate (published in the Congress Gazette of 22nd September 1989) concerns site selection, construction and operation of radioactive waste repositories It determines the licensing procedures and the conditions for the recovery of relevant costs The Bill provides furthermore that the operator of such repositories is absolutely and exclusively liable for any damage resulting therefrom and must cover his liability with security

• Canada

ORGANISATION AND STRUCTURE

1990 AECB Cost Recovery Fees Regulations and consequential amendements to Regulations

These Regulations of 22nd March 1990 - SOR/90-190 (published in the Canada Gazette of 11th April 1990) entered into force on 1st April 1990. They were made pursuant to the Atomic Energy Control Regulations and prescribe the legal obligations to pay fees imposed on applicants for and holders of licences from the Atomic Energy Control Board - AECB. Until then there had been no charges for AECB licensing activities. The purpose of the Regulations is to shift the cost of government services from the general taxpayer to the users and to those who specifically benefit from the services.

Cost recovery fees are accordingly paid by every applicant requesting from the AECB an assessment, issue, renewal or amendment of a licence, approval, acceptance, registration or certificate. However, some institutions defined by the Regulations, such as educational institutions and publicly funded, non-profit health care institutions, are exempted from this obligation.

Adoption of the Cost Recovery Fees Regulations resulted in consequential amendments being made to the the Transport Packaging of Radioactive Materials Regulations (SOR/90-192), the Atomic Energy Control Regulations (SOR/90-191) and the Uranium and Thorium Mining Regulations (SOR/90-193) to ensure compliance with the Cost Recovery Regulations. The latter two were amended in particular to provide that default in payment of the fees may lead to the revocation or suspension of the licence.

REGULATIONS ON NUCLEAR TRADE

Amendment of the Atomic Energy Control Regulations concerning export licences (1990)

The Atomic Energy Control Regulations were amended on 8th March 1990 - SOR/90-165 (published in the Canada Gazette of 28th March 1990) to revoke subsections 7(4) and (5) of the Regulations. Those subsections required the AECB, when deciding whether or not to authorise export of a prescribed substance, to be satisfied about the price and quantity of that substance. The two subsections were replaced by new provisions simply authorising the Board to issue an export licence and to impose conditions on the licence in the interests of health, safety and security.

• Czechoslovakia

ORGANISATION AND STRUCTURE

Establishment of the Federal Committee for the Environment (1990)

The Federal Committee for the Environment was established under Article VI of Constitutional Act No 296 of 1990 Under Act No 297/1990 [Section 24(5)] amending Act No 194/1988 on the competence of federal authorities, the Federal Committee for the Environment is the supervisory authority of the Nuclear Safety Inspectorate

• France

ORGANISATION AND STRUCTURE

Order to amend the 1976 Order setting up an Institute for Protection and Nuclear Safety (1990)

This Ministerial Order of 28th May 1990 (published in the Official Gazette - Journal Officiel de la Republique Française, JORF - of 2nd June 1990) amends the Order of 2nd November 1976, as amended in 1981 and 1983 (see Nuclear Law Bulletin Nos 18 and 28), setting up the Institute for Protection and Nuclear Safety The purpose of the Order is to reorganise the management of the Institute and to further specify its tasks

The Order creates a Steering Committee responsible for the general organisation of the Institute, its orientation and its budget It also establishes a Scientific Committee, chaired by the High Commissioner for Nuclear Energy, which will consider and advise on the Institute's programme of work

The Institute's duties include the preparation of studies as well as research and work on protection and nuclear safety as requested by the different Ministries and agencies concerned It also provides technical support to the Central Service for the Safety of Nuclear Installations

RADIATION PROTECTION

Order defining the control methods laid down by the 1986 Decree on the protection of workers against ionizing radiations (1990)

This Ministerial Order of 1st June 1990 (published in the JORF of 27th June 1990) defines the methods and procedures for carrying out the controls as provided by Decree No 86-1103 of 2nd October 1986 on the protection of workers against ionizing radiations (see Nuclear Law Bulletin No. 38).

These controls concern ionizing radiation sources and their shielding, contamination of the surrounding atmosphere and exposed workers Their results are recorded in reports which give data identifying the establishments, information on personnel operating the sources and devices

This Order repeals an Order of 18th April 1968 also concerning control methods

THIRD PARTY LIABILITY

The new Act on the third party liability of the operators of nuclear installations in France (1990)*

Introduction

France, after all, has not been the last Signatory to ratify the two Protocols of 16th November 1982 amending the Paris Convention and the Brussels Supplementary Convention, as their ratification was authorised by Act No 90-397 of 11th May 1990 (published in the JORF of 16th May 1990) A Bill to ratify the Protocols had been put before Parliament in 1983 but the Parliamentary Commission responsible for its submission had rejected it at the time, alleging that in order to ratify the Protocols, an Act to implement them, which could not be considered separately, was required

The French Act on third party liability in the field of nuclear energy (30th October 1968) has now been amended in parallel with the ratification legislation It has taken nearly seven years, despite all the background work, to prepare or more precisely to adapt legislation on third party liability in the field of nuclear energy to the international treaties' requirements

This protracted delay was partly due to what happened with the original Bill Initially, those responsible for it had submitted a very different text. They had in mind legislation which reproduced precisely certain provisions of the Paris Convention and, more particularly, including the Recommendations of

---

* This Note has kindly been provided by Mr Paul Rocamora, Head of the Insurance Bureau of the French Atomic Energy Commission

the OECD Steering Committee for Nuclear Energy This would have helped to resolve the numerous problems regarding application of the nuclear Conventions which were pinpointed by the OECD Nuclear Energy Agency (NEA) Group of Governmental Experts on Nuclear Third Party Liability, in the light of the trends in the different countries after the Chernobyl accident

Also, there were differences of opinion between the various Ministries and the nuclear operators regarding the level to be fixed for the maximum amount of liablity Too high a level was considered inadvisable, in case it focussed public opinion on the dangers of nuclear energy in a new consumer-oriented climate where this opinion now paid greater attention to this type of problem In addition, operators were concerned about the already heavy costs incurred due to stringent safety rules They considered an undue increase in their insurance fees was unwarranted

These different reasons led the public authorities to draw up a less ambitious Bill, simply amending the provisions of the old Act of 30th October 1968 to comply with the Protocols of 16th November 1982 It should be noted that under the French Constitutional regime, international treaties are directly applicable once they have been adopted by Parliament and published in the Official Gazette (JORF) Therefore, the Act only lays down the measures which, under the Paris Convention and the Brussels Supplementary Convention, are left to each Contracting Party (Section 1 of the above Act)

Following its consideration by the different departments, the text was scrutinized by the Council of State (Conseil d'Etat), adopted by Parliament without any major problem, and was at last published in the Official Gazette as "Act No 90-488 of 16th June 1990 amending Act No 68-943 of 30th October 1968 on third party liability in the field of nuclear energy"

The main features of the new legislation are the following

- a considerable increase in the operator's maximum amount of liability but with lesser amounts for low risks,
- adoption of provisions specific to the transport of nuclear substances,
- account taken of measures recommended by the OECD Steering Committee for Nuclear Energy to improve compensation of victims,
- establishment of administrative sanctions and additional penalties in case of default regarding financial security

I. Scope

The scope of application of the Act of 30th October 1968 is unchanged As regards its territorial scope, it remains that originally set by the Nuclear Conventions since the public authorities decided against inserting a provision reproducing a Recommendation by the Steering Committee for Nuclear Energy which aimed to extend the scope of the Act to damage suffered in a Contracting State, irrespective of where the nuclear incident occurred The possibility of extending the application of the Paris Convention to damage suffered in a

non-Contracting State subject to reciprocity had also been considered, however, interpretation of the concept of reciprocity could have raised problems and this plan was set aside

As regards the operators subject to the Act, they are those persons operating nuclear installations governed both by Article 1(a)(ii) of the Paris Convention and the Decrees on large nuclear installations (INBs) made in implementation of Section 8 of Act No 61-842 of 2nd August 1961 to combat atmospheric pollution and odours

However, to facilitate any claims presented by victims and to avoid misunderstandings on the definition of a nuclear installation, Section 2 of the Act, as amended, follows a Recommendation by Euratom of 28th October 1965 as well as the interpretation of the definition of nuclear installation approved by the Steering Committee for Nuclear Energy which provides that where several nuclear installations or a nuclear installation and any other installation holding radioactive materials have the same operator and are located on the same site, they are considered as a single nuclear installation

Also, it was no longer necessary to keep Section 3 of the Act of 30th October 1968, since both the cases to which this Section extended the operator's liability have been dealt with in the Protocol of 16th November 1982 to amend the Paris Convention The first was dealt with in the definition of nuclear incident which henceforth includes damage "from ionizing radiations emitted by any source of radiation inside a nuclear installation" [Article 1(a)(i)], the second case has been settled by doing away with the exclusion in Articles 3(a)(ii)(2) and 6(c)(ii) of the above Convention so that damage to the means of transport carrying the nuclear substances remains covered, as in the past, but by directly applying the Paris Convention

Finally, although this is not an innovation, it should be pointed out that this Act also covers military installations Since the Brussels Supplementary Convention does not apply to military installations and also to standardise the compensation regime to the advantage of victims of a nuclear incident originating in such installations, Section 4 of the amending Act provides that the 600 million francs in Section 5 of the Act of 30th October 1968, should be replaced by 2 500 million francs, an amount which is equivalent to the new ceiling of compensation for damage according to the Protocol to the Brussels Convention

This point is of particular interest in the context of the forthcoming revision of the 1963 Vienna Convention as the question of compensation of damage due to a nuclear incident originating in a military installation has been put forward as an item to be considered

II Amounts of Liability and Compensation

While Section 4 of the Act of 30th October 1968 provided for a standard amount of liability 50 million francs per nuclear incident, the amending Act makes three changes.

- Section 4 raises the maximum liability of operators of nuclear installations to 600 million francs per nuclear incident This figure is more consistent with the amounts of liability covered by financial security adopted by other Contracting Parties It is also a first step in French legislation towards harmonizing the amounts among those Paris Convention Parties whose long-term aim is to adopt an amount of liability and financial security, in particular for large nuclear installations, not lower than 150 million Special Drawing Rights (approximately 1 150 million francs)

- In addition, the 600 million francs take into account the present capacities of the nuclear risks insurance market To avoid reducing or using up his insurance coverage following a first nuclear incident, the operator must immediately reinstate the security to its maximum amount, this implies that the insurer will be in a position to offer a 1 200 million francs security if necessary The situation is different in other countries where the law imposes only a partial reconstitution immediately, eg 10 or 25 per cent of the maximum amount, the concern in France is that the operator's financial security always be kept in its entirety

  In parallel, the Act makes use of the option provided by Article 7(b)(ii) of the Paris Convention which allows the setting of a lower amount, taking account of the nature of the installation and the nuclear substances and the foreseeable consequences of an incident, and reduces the operator's maximum liability to 150 million francs when only low-risk installations are operated on the same site The characteristics of those installations will be defined by decree, following the published opinion of the Interministerial Committee for Large Nuclear Installations This Committee chaired by a State Counsel (Conseiller d'Etat), gives its opinion and makes proposals on all matters relating to large nuclear installations, in particular concerning the preparation and implementation of regulations on those installations It therefore seemed logical to the Members of Parliament that the Committee be consulted on the draft decree In actual fact, fairly few installations should be involved as regards this lower amount of liability, at present, the Committee would consider the case of reactors with a maximum thermal power below 100 megavatts, small installations for the preparation, fabrication or conversion of radioactive substances, which do not process plutonium or uranium enriched to more than 20 per cent, and facilities for the surface storage of solid low and medium level radioactive waste

- Furthermore, Section 5 sets the operator's maximum liability at 150 million francs for transports of nuclear substances This measure had been proposed when the Bill was first prepared, to take into account the French safety regulations governing the transport of radioactive materials based on the Recommendations of the International Atomic Energy Agency which impose very strict safety rules on packaging This measure was adopted, similarly to other European legislation (Germany, Sweden, Switzerland), which allows amounts of liability and insurance for transport which are much lower than the operators' maximum amount of liability

In any event, setting liability at 150 million francs in both the above cases would not affect a victim's right to compensation in case of a nuclear incident since Section 5 provides that beyond that amount, the State will pay compensation according to the conditions and limits set by the Brussels Supplementary Convention The OECD Council's Recommendation of 16th November 1982 inviting Contracting Parties whose legislation provided for lower liability amounts to take the necessary steps to satisfy any claims for compensation in excess of those amounts, up to the total amount established for nuclear operators is therefore complied with Also, it should be noted that Section 12 of the new Act raises the additional compensation by the State to 2 500 million francs for damage suffered on French territory for as long as the Protocol to amend the Brussels Supplememtary Convention is not in force

III. Specific Provisions on Transport

The provisions of Section 2 of the Act of 30th October 1968 on substituting a carrier for a nuclear operator have been kept, although we may question their interest since to this day, the option has not been used, no carrier to our knowledge having made this request to the public authorities

But mainly, the new Act contains four sections on the transport of nuclear substances, whereas the Act of 30th October 1968 simply mentioned transport in the context of regulating transits

Section 5, already mentioned, determines the operator's maximum amount of liability at 150 million francs per nuclear incident during the transport of nuclear substances

In parallel, that Section repeals Section 9 of the old Act on the transit of nuclear substances on French territory In any event implementation of Section 9 raised a legal problem regarding other Paris Convention Contracting States because it required a higher amount of financial security than that for French operators

Section 6 is new, henceforth, the operator of a nuclear installation situated in France must assume liability for transport for the part of the journey on French territory when the nuclear substances are carried between France and a country which is not a Party to the Brussels Supplementary Convention and vice versa This requirement, which accords with the Paris Convention (see paragraph 32 of the Expose des Motifs), allows victims of a nuclear incident on French territory to benefit from compensation as high as that of the ceiling provided by the Brussels Supplementary Convention - this would not have been possible had liability for transport been assumed by the operator of a country whose amounts of compensation were lower than the Brussels Convention limits

A previous Bill provided that the French operator had to assume such liability during transport on the territory of a State Party to the Brussels Supplementary Convention and not only on French territory. In the same spirit, the purpose of this provision was to facilitate the application of the Brussels Supplementary Convention, in accordance with a Recommendation by the Steering

Committee for Nuclear Energy, when the Joint Protocol to the Paris and Vienna Conventions entered into force* However, during the discussions, the authorities considered that it would be premature to anticipate the entry into force of the Joint Protocol and that this question should be examined when France decided to ratify the Protocol Therefore the operator's liability is restricted to French territory.

We may nevertheless assume that,even with its present wording, this Section should make it easier to achieve the initial aim since, if the French operator must be liable for transport over part of the journey, it will be difficult to negotiate an apportionment of liabilities outside French territory and therefore, there are grounds for believing that he will in effect remain liable for the duration of the international transport

Section 7 regulates the land transport of nuclear substances in transit over French territory more satisfactorily than the previous Section 9 Henceforth, there is a difference according to whether or not the operator liable for the transport is governed by the Paris Convention If so, the amount set by the national legislation of the operator liable would be sufficient [Section 7 of the Convention], unless it is too low for the risk involved [Section 7(e) of the Convention] In that case it would have to be raised but the foreign operator will not be required to take out insurance or other financial security to an amount higher than that which French legislation imposes on the French operator for the transport of nuclear substances, namely, 150 million francs per incident If the operator liable is not governed by the Paris Convention, the transport operation must be covered by insurance or financial security amounting to 1 500 million francs per nuclear incident The intention of this provision is to avoid, insofar as possible, that transports of nuclear substances not involving French nuclear installations or not offering the same safety conditions or amounts of security for incidents as those of operators belonging to the same international liability regime should transit through France It should be noted, however, that Article 5 of the Paris Convention, as amended by the 1982 Protocol, should allow a French operator to assume by written contract liability for a transport in transit through the national territory, even without passing through a French installation, but only if he has an interest in so doing and under conditions which authorise him to check safe transport and financial security to avoid any censure by his authorities

Section 8 of the amending Act inserts a Section 9-3 which aims to establish proof of the existence of insurance or financial security for the international transport of nuclear substances

Does this mean that this Section establishes, in an indirect way, mandatory insurance for <u>all</u> transports coming from or going to another country?

---

* A Joint Protocol on the Application of the Vienna Convention and the Paris Convention which was adopted in Vienna on 21st September 1988 by more than twenty countries to resolve any conflict of laws that might result from the simultaneous application of both Conventions to the same nuclear incident Its entry into force requires ratification by five States Parties to each Convention.

As regards transports governed by the Paris Convention this question is settled by its Article 10 which provides for mandatory cover The French Act simply repeats the obligation imposed on the operator by Article 4(c) of the Convention to provide a certificate justifying the existence of insurance or other financial security Use has also been made of the new option provided by the 1982 Protocol, which is common practice in the Contracting States, to require such certificates only for international transports

However, this new obligation is somewhat ambiguous concerning transports which are not governed by the Paris Convention Does this obligation apply for all international transports or only for those which would have been subject to the Paris Convention regime if the country where the substances originate, or to which they are destined, had been a Party to the Convention? We believe that the latter is the correct interpretation since, originally, this obligation was only intended to apply to transports in transit and the ambiguous formulation is simply the result of the mishaps occurring with texts which are amended several times during their elaboration Also, the term "nuclear substances" is used specifically, and the Convention [Article 1(a)(v)] defines them as "nuclear fuel (other than natural uranium and other than depleted uranium) and radioactive products or waste" If a wider obligation to take out insurance had been intended, the term "radioactive materials" would have been used instead

Finally, Section 8 specifies that an order will determine the model financial security certificate, for international transports of nuclear substances governed by the Paris Convention, the certificate will be established by and at the expense of the operator according to a model recommended by the Steering Committee for Nuclear Energy For other transports, the order will most probably only specify the mandatatory information to be given in the certificate in accordance with the Act's new Section 9-3

This being so, control of the application of the provisions of this Section is still to be set up and the administrative authorities should give the instructions required in this respect

IV Other Provisions

The provisions of Section 9 amending Section 17 of the Act of 30th October 1968 improve the situation for victims from the viewpoint of the competent court

The Paris Convention already deals with this question by laying down the principle of unity of jurisdiction, namely that claims for compensation are under the exclusive jurisdiction of one single Contracting State However, the provisions of Section 17 of the Act of 30th October 1968 while providing that such claims were not within the competence of administrative courts were not sufficient to avoid the possibility that several courts could have jurisdiction to rule on claims for compensation for the same nuclear incident This situation could have complicated the distribution of compensation

To eliminate this problem, Section 9 provides for the exclusive jurisdiction of one court when the incident occurs on French territory the "Tribunal de grande instance de Paris" Thus, it will be the only court to deal with all claims so that it can check that the ceiling of liability and even the maximum amount to be assigned from public funds are not exceeded, also this will allow the judge to apportion the compensation to give priority to bodily injury in accordance with Section 13 of the Act

Section 10 increases the penalties both for an operator who does not meet his obligation to cover his liability and for a carrier who cannot give proof of the existence of security

In addition, administrative penalties have been established which now allow the authorities,once they have noted a violation, to suspend operation of the installation or the transport until proof is provided that this has been remedied

Finally, to allow the operator sufficient time to comply with the new provisions and to negotiate the new liability amounts, the Act grants three months' delay as from its entry into force, that is, as soon as the Protocol to amend the Paris Convention is published in the Official Gazette

Thus this work has been completed to the satisfaction of Parliament since the International Convention and French legislation will determine on the same day the implementation in France of the amendments to the operators' third party liability regime and system of compensation for damage following a nuclear incident

*

* *

The text of the Act of 30th October 1968 on Third Party Liability in the Field of Nuclear Energy, as amended by the Act of 16th June 1990, is reproduced in the Supplement to this issue of the Bulletin

FOOD IRRADIATION

Order on treatement of poultry by ionizing radiation (1990)

The above Order of 27th August 1990 (published in the JORF of 1st September 1990) authorises the possession with a view to selling and the sale of poultry which has been irradiated for purposes of microbic decontamination and preservation It specifies the conditions for authorisation and defines in particular the maximum absorbed dose (1 Kilogray-KGy maximum), the packaging materials and the measurements and controls carried out on the treated products

• Germany

GENERAL LEGISLATION

GERMAN UNIFICATION*

1 Accession of the German Democratic Republic to the Federal Republic of Germany

On 23rd August 1990, the German Democratic Republic (GDR), in accordance with Article 23 of the Constitution (Basic Law) of the Federal Republic of Germany (FRG), declared its accession to the Federal Republic of Germany to be effective as of 3rd October 1990 (Gesetzblatt der Deutschen Demokratischen Republik - DDR - 1990, I, p 1324) Thus, the GDR ceased to exist on midnight on 2nd October 1990 and since 3rd October 1990, both Germanies are unified in the Federal Republic of Germany.

United Germany will gain full sovereignty according to the terms of the Treaty of 12th September 1990, between both Germanies, France, the United Kingdom, the United States and the USSR on the final settlement in regard to Germany - so-called 2+4-Treaty (Bundesgesetzblatt, 1990, II, p 1317) The Treaty will enter into force for the United Germany on the date of deposit of the last instrument of ratification by the Contracting Parties

The re-unification of Germany took place in several legal steps This holds also for the harmonization and the unification of nuclear energy law

2 Treaty on the Establishment of a Monetary Union

The first step was the conclusion of the Treaty of 18th May 1990, concerning the establishment of a monetary, economic and social union between both Germanies (Bundesgesetzblatt, 1990, II, pp 518, 533), this Treaty according to its Article 38 entered into force on 30th June 1990 (Bundesgesetzblatt, 1990, II, p 700) The Treaty on the Monetary Union (TMU) also provides for the establishment of an environmental union According to Article 16 of the TMU, the protection of the environment is a main concern for both parties (paragraph 1) The GDR accepted the obligation to ensure by its legislation that new installations and activities will meet with the prerequisites of the environmental law, including nuclear energy law, of the FRG Existing installations and activities will be brought up to the safety level of the FRG as soon as possible (paragraphs 2, 4) Moreover, the GDR will harmonize its measures on environmental protection with those of the FRG

---

* This note and the following ones have kindly been provided by Dr Norbert Pelzer, of the Institute of Public International Law, Göttingen University

According to Annex II, No III 2 to the Treaty, the GDR expressly undertook to put into force the Atomic Energy Act of the FRG in its territory with the proviso that operating licences granted at the time of the entry into force of the TMU will continue to have effect That continued validity was limited to five years for nuclear power plant licences, and to ten years for all other nuclear licences Apart from maintaining the licences, the provisions of the Atomic Energy Act of the FRG concerning the control and supervision of activities as well as provisions on conditions attached to licences, the revocation of licences and on substantial alterations of licences entered into force immediately Therefore, in case of danger operations and activities can be stopped immediately

3 Transmission of the nuclear law of the FRG to the GDR

The GDR fulfilled its obligations under the TMU by issuing an Act on 21st June 1990 concerning the bringing into force the regulations of the FRG in the GDR (Gesetzblatt der DDR, 1990, I, p 357) (so-called "Mantelgesetz") In addition to this general Act, the GDR Parliament on 29th June 1990 adopted the Environment Outline Act ("Umweltrahmengesetz") (Gesetzblatt der DDR, 1990, I, p 649)

This Act, in its Section 2, provides for a comprehensive legal framework for nuclear safety and radiation protection on the basis of the Atomic Energy Act of the FRG It spells out that its aims are to provide for protection of life, health and property against the dangers of nuclear energy and ionizing radiation and to compensate damage suffered

In accordance with Section 2 paragraph 2 of the Act, the Atomic Energy Act of the FRG entered into force in the GDR on 1st July 1990 At the same time, the complementing Ordinances of the Act became valid, and the corresponding legislation of the GDR expired, with the exception of provisions in some minor fields on condition they are in line with the "ordre public" of the FRG The Directives of the European Communities, which are directly applicable, are to enter into force on 1st January 1991

The keeping in force of licences issued under the old law was confirmed The same holds for the immediate applicability of the supervisory system of the FRG

The introduction of the nuclear law of the FRG entailed an introduction of the nuclear liability law, including the Paris Convention Of course, the latter being an international Convention comprising mutual obligations of the Contracting Parties could not be transferred It therefore was introduced as a national law of the GDR, confining its effect like every national law to the territory of the GDR As a consequence of the change in nuclear liability law, for the first time, the licensees in the GDR had to provide and maintain financial security to cover their liability.

As a result of the TMU and the complementing GDR legislation, the nuclear law of the FRG became effective in the GDR on 1st July 1990 As for its legal character, it was GDR law adopted by the Parliament of the GDR

4 Unification Treaty

The third and final step for unifying both Germanies and their law systems was the conclusion of the Treaty of 31st August 1990, between the FRG and the GDR on the establishment of the unity of Germany (Unification Treaty) (Bundesgesetzblatt, 1990, II, pp 885, 889) This comprehensive instrument under public international law contains 45 Articles, a final clause, a Protocol, and 3 Annexes, covering 356 pages in the German Official Gazette The Treaty entered into force on 29th September 1990 (Bundesgesetzblatt, 1990, II, p 1360)

On the basis of the environmental union established in accordance with Article 16 of the TMU in connection with the GDR Environment Outline Act, Article 34 of the Unification Treaty once more stressed the task of the German legislator to protect mankind by applying the principle of prevention, the polluter-pays-principle, and the principle of co-operation The unity of the ecological conditions of life at a high level, at least at that of the FRG, must be enhanced Programmes to achieve that object will be developed with a special view to preventing danger to public health

While Article 34 constitutes a programme provision to be considered in the united Germany, Articles 3-20 of the Unification Treaty (UT) provide for the necessary legal instruments to transfer and extend the law of the former FRG to the territory of the former GDR*

Articles 3-7 deal with the extension of the Basic Law (Constitution) As from the validity of the accession, federal law enters into force in the territory of the GDR, the same holds for the treaties establishing the European Communities and for Community law (Articles 8, 10 UT) The law of the former GDR may remain valid under the provisos listed in Article 9 of the UT

International treaties and arrangements to which the FRG is a Party, including membership in international organisations, remain in force, their scope of application is extended to the incorporated part of Germany (Article 11, UT) As for treaties and other international acts of the former GDR, Germany will discuss the questions of continuation, adaptation and expiration with the respective Parties (Article 12, UT)

Court decisions and administrative decisions issued by the competent courts and authorities of the former GDR before the accession will remain in force However, they may be cancelled, if they are not in line with the rules of law of the FRG (Articles 18, 19, UT)

---

* Five new "Länder" (States) have been established on the territory of the former GDR Mecklenburg-Vorpammern, Brandenburg, Sachsen-Anhalt, Thuringen and Sachsen (Gesetzblatt der DDR, 1990, I, p 955) The Eastern part of Berlin is now unified with former West Berlin and now forms a "Land" of Germany Germany now comprises 16 "Länder"

5 Nuclear Law

As specified by the Articles of the Unification Treaty quoted above, the entire nuclear law of the FRG will be transferred and extended to the five new "Länder" in the territory of the former GDR On the date of the accession (i e 3rd October 1990) the Atomic Energy Act as amended, the Radiation Protection Ordinance, and all other implementing and complementing legal instruments entered into force in the new "Länder" This holds also for international treaties and other international acts, such as the Paris Convention and the Brussels Supplementary Convention In that regard the Government will give due notification to the depositaries of the treaties*

The unification entailed some minor amendments of the nuclear law in force (Annex I, Chapter XII B, Nos 1-3, UT)

- The Atomic Energy Act was amended by inserting a new Section 57a which provides for necessary transitional rules, e g concerning limited continuation of old licences, already agreed upon in the TMU and the GDR Environment Outline Act

- The Radiation Protection Ordinance was amended by a new Section 89a which rules that in the new "Länder" the Ordinance will not be applicable to mining of radioactive minerals

- The Act on Preventive Radiation Protection was amended by a minor change of the provisions on administrative competences (Section 11, paragraph 9)

In the nuclear field, two Ordinances of the former GDR remained valid in accordance with Annex II, Chapter XII, Nos 2 and 3, UT

- The GDR Ordinance on Nuclear Safety and Radiation Protection of 1984 (Gesetzblatt der DDR, 1984, I, p 341) and its complementing Regulation of 1984 (Gesetzblatt, 1984, I, p 348, 1987, p 196)

- The Order of 1980 on radiation protection in relation to slagheaps and industrial repositories (Gesetzblatt der DDR, 1980, I, p 347)

Both provisions will remain applicable to mining activities, as concerns radioactive substances, especially when radon derivatives are present

The regulations will be kept for a transitional period because they contain specific provisions for supervising activities which have not been developed in West Germany with the consequences that nuclear law does not cover these fields adequately

---

* This includes an updating of the list of nuclear installations to be transmitted to the Belgian Government according to Articles 2(a) and 13 of the Brussels Supplementary Convention

RADIATION PROTECTION

Ordinance on Establishing a Radiation Protection Register (1990)

By Ordinance of 3rd April 1990, the Federal Government modified the Radiation Protection Ordinance as amended in 1989 (see Nuclear Law Bulletin No 44) and the X-ray Ordinance of 1987 (see Nuclear Law Bulletin No 39) by inserting new sections concerning the establishment of a radiation protection register (Bundesgesetzblatt, 1990, I, p 607) The new provisions were made in implementation of the Atomic Energy Act The purpose of the register is to collect and record the doses of radiation of professionally exposed persons and the dates of exposure The register has been established at the Bundesamt für Strahlenschutz (Federal Radiation Protection Agency) The new provisions in the two Ordinances fix the details for collecting and handling the relevant data Information collected in the register must be kept for 95 years following the birth of the persons concerned

RADIOACTIVE WASTE MANAGEMENT

Ordinance on Advance Financial Contributions for the Final Repository for Radioactive Waste (1990)

On 12th July 1990, the Federal Government issued the Second Ordinance to amend the Ordinance of 1982 on advance financial contributions towards the construction of federal installations for the safe containment and disposal of radioactive waste (Bundesgesetzblatt, 1990, I, p 1418) (the text of the Ordinance is reproduced in Nuclear Law Bulletin No 30, see also Nuclear Law Bulletin No 39) The amendment was made to take account of the Government decision to stop construction of a reprocessing plant at Wackersdorf This change in nuclear policy entailed a change in the key according to which nuclear industry has to pay advance fees for the final nuclear waste repository

ENVIRONMENTAL PROTECTION

Ordinance on the assessment of the effects of mining projects on the environment (1990)

The above Ordinance of 13th July 1990 was published in Bundesgesetzblatt, 1990, I, p 1420 The projects listed in the Ordinance which need a prior assessment of their possible environmental effects include subsoil installations for the safe containment or final disposal of radioactive waste The relevant information in regard to the projects to be submitted to the competent authorities under the Federal Mining Act of 1980 as last amended in 1990 (Bundesgesetzblatt, 1980, I, p 1310, 1990, I, p 215) are enumerated in the Ordinance Such information must also be transmitted to the authorities

of the European Community Member States in accordance with the Federal Mining Act Consultations with those authorities must be held with due regard to the principles of reciprocity and equivalent treatment

REGULATIONS ON NUCLEAR TRADE

Amendments to the Foreign Trade Act (1990)

The Foreign Trade Act as last amended in 1986 was amended by the Fifth and the Sixth Acts of 20th July 1990, to amend the Foreign Trade Act (Bundesgesetzblatt, 1990, I, p 1457, p 1460) The amendments aim at improving and tightening the means for supervising and controlling the export and transit of sensitive material and equipment, including nuclear material, goods and technology

• Hungary

RADIATION PROTECTION

Ordinance of the Council of Ministers on the establishment of a National Nuclear Accident Prevention System (1989)*

Ordinance No 135 of 22nd December 1989 (published in the Official Gazette - Magyar Közlöny - of 22nd December 1989) was made by the Council of Ministers in implementation of Act No I of 1980 on atomic energy

This Ordinance sets up a National Nuclear Accident Prevention System to evaluate the effects of nuclear accidents occurring in a national nuclear installation, during the transport of nuclear materials or outside the national territory, and to counteract them insofar as possible A Government Commission for the Prevention of Nuclear Accidents is responsible for declaring a state of emergency and ordering the partial or total entry into operation of the System After having declared such an emergency, it co-ordinates the measures taken within the System The levels of radioactive contamination triggering the System, as well as radiation protection standards applicable to the population in case of a nuclear hazard, are determined by the Minister of Social Affairs and Health

* A summary of this Ordinance is to be published in the WHO Digest of Health Legislation

• Italy

RADIATION PROTECTION

Act providing for the implementation of the Community Directives regarding health and the protection of workers (1990)

Act No 212 of 30th July 1990 of the President of the Republic (published in the Official Gazette of 4th August 1990) delegates the necessary powers to the Government to bring the national regulations on protection of workers and the population against ionizing radiation into line with the Directives of the European Communities in this field (see Nuclear Law Bulletin Nos 26, 34, 37) The provisions are to be promulgated one year following the entry into force of this Act

• Norway

ORGANISATION AND STRUCTURE

Royal Decree of 1990 extending the authority of the Institute for Energy Technology regarding nuclear reactors

By a Royal Decree of 24th August 1990, the Institute for Energy Technology's (Institutt for Energiteknikk - IFE) authorisation to own and operate nuclear reactors has been extended to 31st December 1999

The Institute owns and operates the JEEP II research reactor and the Halden Boiling Water Reactor, a research reactor established as an OECD-sponsored international project

• Portugal

RADIATION PROTECTION

Decree on protection against ionizing radiations (1990)

Decree No 9/90, published in the Official Gazette (Diario da Republica) of 19th April 1990, was adopted in implementation of Community Directives Nos 80/836, 84/467 and 84/466/Euratom on basic standards for protection against the dangers of ionizing radiation and laying down basic measures for the radiation protection of persons undergoing medical treatment (see Nuclear Law Bulletin Nos 26, 33 and 34), as well as Decree-Law No 348/89 of 12th October 1989 on radiation protection

The Decree establishes the basic principles in the field of radiation protection applicable to occupationally exposed persons, to individuals and to the population as a whole The Decree specifies, in particular, the duties of the authorities and of the persons responsible for installations or activities likely to involve exposure to ionizing radiation It defines the different areas which should be monitored and provides for a prior licensing system for all activities involving ionizing radiation, including work on disposal and storage of radioactive waste It also deals with exposure to radiation for medical purposes and provides for the measures to be taken by the authorities regarding emergency plans in case of a nuclear accident Finally, the Annexes to the Decree contain tables of dose limits, explanations on the concepts and terms used in the context of radiation protection, the list of activities exempted from licensing, etc

RADIOACTIVE WASTE MANAGEMENT

Order on hospital residues (1990)

Order No 16/90, published in the Diario da Republica of 21st August 1990 provides for the treatment of solid hospital residues of all types including radioactive waste The Order specifies that radioactive waste and materials are subject to the regime established by Decree-Law No 348/89 and Decree No 9/90 (see note above)

ENVIRONMENTAL PROTECTION

Decree-Law on environmental protection (1990)

Decree-Law No 186/90, published in the Diario da Republica of 6th June 1990, was made in implementation of Community Directive 85/337/CEE of 27th June 1985 on the assessment of the effects of certain public and private projects on

the environment (OJEC No L 175 of 5th July 1985) According to the Decree-Law, approval of nuclear power plant projects and other nuclear reactor projects, as well as radioactive waste repositories is subject to a prior assessment of their effect on the environment

• Sweden

RADIATION PROTECTION

Regulations on the removal from controlled areas of nuclear installations of goods for unrestricted use or disposal as waste (1989)*

These Regulations (No 3 of 18th December 1989) by the National Institute for Radiation Protection were published in SSI FS of 18th January 1990 They were made in implementation of Ordinance No 293 of 19th May 1988 on radiation protection (see Nuclear Law Bulletin Nos 41 and 42, the text of the Ordinance is reproduced in the Supplement to Nuclear Law Bulletin No 42) They lay down the maximum permissible levels of surface contamination of goods to be removed from a controlled area They also lay down the maximum permissible levels of radioactivity in those goods in addition to the levels of natural activity occurring in similar goods outside nuclear installations

• Switzerland

GENERAL LEGISLATION

Public votes on nuclear energy (1990)**

The Swiss population and the cantons have decided against giving up nuclear energy, but

---

* The above Regulations were summarised in the WHO International Digest of Health Legislation, 1990, Vol 41, No 2

** Note kindly prepared by the Legal Service of the Swiss Federal Office for Energy

Over the week-end of 22nd and 23rd September 1990, the population and the cantons had to take a decision on three questions of major importance for the country's energy policy They were the following

- a constitutional popular initiative asking for progressive and definite abandonment of nuclear energy (abandonment),

- a constitutional popular initiative asking for a ten-year "legal pause" before any possible new construction of a nuclear power plant (moratorium),

- an Article in the Constitution, proposed by the Government, giving the Confederation authority to promote energy economies (constitutional Article on energy)

On matters involving the Constitution, public votes require a dual majority vote, that of the population and of the cantons to decide on each question

Abandonment was rejected by a 52.9 per cent majority

On the other hand, the moratorium was accepted by a 54 6 per cent majority

The constitutional Article on energy was accepted by a 71 per cent majority

The cantons accepted the constitutional Article on energy by unanimity A majority of cantons decided in favour of the moratorium and against abandonment

In concrete terms, this means that the Swiss Government has been given the necessary legal basis (constitutional Article on energy) for implementing legislative texts whose purpose is to promote energy economies and use of new energies Furthermore, Switzerland, without giving up nuclear energy, will not build a new nuclear power plant before the year 2000

• United Kingdom

REGIME OF NUCLEAR INSTALLATIONS

The Nuclear Installations Act 1965 (Repeal and Modifications) Regulations 1990

The above Regulations (SI 1990 No 1918) were made on 18th September 1990 and entered into force on 31st October 1990

The Regulations repeal part of Section 1(1) of the Nuclear Installations Act 1965 to remove the exemption of the United Kingdom Atomic Energy Authority (UKAEA) from licensing under the Act

The Regulations also amend the 1965 Act to ensure that the UKAEA's duties in respect of the safety of premises it occupies will continue to apply whether or not a nuclear site licence has been granted

• United States

GENERAL LEGISLATION

Revision of NRC Rules Provision of information on hazardous conditions (1990)

On 21st March 1990, the Nuclear Regulatory Commission (NRC) published in the Federal Register (55 FR 10397) a revision to its rules in Title 10, Chapter 1 of the Code of Federal Regulations governing the conduct of all NRC licensees and licence applicants These rule changes were considered necessary to prohibit the use in agreements related to employment of provisions which would inhibit the free flow of information to the NRC from any employees or former employees of nuclear undertakings

Employees who have been dismissed or discriminated against because they have testified or given evidence on potential violations of NRC Rules, or brought suit under Section 210 of the Energy Reorganisation Act, have the right to file complaints with the Department of Labour for the purpose of obtaining a remedy for the personal harm caused by the dismissal discrimination Following the filing of a complaint, the Department of Labour performs an investigation If either the employee or the employer is not satisfied with the outcome of the investigation, a hearing can be held before an Administrative Law Judge, with review by the Secretary of Labour The Secretary of Labour can issue an order for the employee to be rehired, or otherwise compensated if the employee's case is justified

In many cases, the employee and the employer reach settlement of the issues raised in the Department of Labour proceeding before completion of the formal process and a finding by the Secretary of Labour In general the NRC supports settlements concluded pursuant to Section 210 of the Energy Reorganisation Act as they may provide appropriate remedies to employees without the need for litigation However, such agreements might impose restrictions upon the freedom of employees or former employees protected by Section 210 to testify or participate in NRC licensing and regulatory proceedings or to otherwise provide information on potential violations or other hazardous conditions to the NRC or its staff

The rule as revised prohibits the imposition of conditions in Section 210 settlement agreements, or any other agreement affecting employment, which would require an employee or former employee to withhold information or testimony concerning security, physical protection or material control and accounting issues or could discourage such employees from freely and fully communicating to the NRC information relating to its regulatory responsibility Such conditions could be a threat to safety and jeopardise the execution of the NRC's overall statutory duties

RADIOACTIVE WASTE MANAGEMENT

Amendment of NRC Environmental Protection Regulations temporary storage of spent fuel after cessation of reactor operation (1990)

On 8th September 1990, the NRC published in the Federal Register (55 FR 38472) an amendment to 10 CFR Part 51, Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions This amendment reflects the NRC's determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least thirty years beyond the licensed life for operation of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations It also takes into account the NRC's belief that there is reasonable assurance that at least one mined geological repository will be available within the first quarter of the twenty-first century, and sufficient repository capacity will be available within thirty years beyond the licensed life for operation of any reactor to dispose of the commercial high-level waste and spent fuel originating in such reactor

Amendment to Regulations concerning storage of spent fuel in dry casks (1990)

On 18th July 1990, in accordance with the NRC Code of Federal Regulations published in the Federal Register (55 FR 29181) an amendment to 10 CFR Parts 50, 72 and 170 to provide a general licence for storage of spent fuel in dry casks on the sites of nuclear power reactors without the need for additional site-specific NRC approvals, as directed by the Nuclear Waste Policy Act of 1982 (NWPA) (see Nuclear Law Bulletin Nos 26,41)

Section 218(a) of the NWPA directed the Department of Energy to establish a spent fuel storage development programme, with the objective of establishing one or more technologies that the NRC might approve for use at nuclear power reactor sites without, to the maximum extent practicable, the need for additional site-specific approvals by the NRC Section 133 of the NWPA directed the NRC to establish, by rule, procedures for licensing any technology approved under Section 218(a)

In order to utilize an NRC certified cask under a general licence, power reactor licensees must (1) perform written evaluations showing that there is no unreviewed safety question or change in reactor technical specifications related to the spent fuel storage, and that spent fuel will be stored in

accordance with the cask's Certificate of Compliance, (2) provide adequate safeguards, (3) notify the NRC prior to first storage of spent fuel and whenever a new cask is added to storage, and (4) maintain specified records

THIRD PARTY LIABILITY

Report to the Congress from the Presidential Commission on Catastrophic Nuclear Accidents (1990)

The Presidential Commission on Catastrophic Nuclear Accidents presented its final report to the United States Congress on 20th August 1990 The Commission was established by the President of the United States in 1988, under the Price-Anderson Act (the text of the Act is reproduced in the Supplement to Nuclear Law Bulletin No 42, see also Nuclear Law Bulletin No 43) Before drawing its conclusions, the Commission heard from a wide range of witnesses The report recommends a system for compensating victims of a catastrophic nuclear accident whose consequences exceeded the liability of a nuclear operator under the Price-Anderson Act (approximately $7 3 billion)

The recommended system deals in particular with questions of civil procedure and latent injury

In relation to civil procedure, the Commission was directed to consider whether it was necessary to change the laws governing liability or civil procedure to ensure fair, timely and efficient resolution of valid damage and injury claims The Commission concluded that such a change was necessary It recommended that a procedure of three phases having a judicial framework but incorporating certain administrative features be established under federal law It also recommended that this federal law operate to the exclusion of State law

Under this proposed procedure, the claims would be consolidated in a first phase before one single federal court which would also supervise interim payment of compensation. As a second phase, the court would identify issues common to groups of claimants and hold generic hearings Finally, as a third phase, each claim would be individually resolved, either by an out-of-court settlement, or by informal proceedings administered by a court-appointed master on the basis of specified guidelines, or by formal proceedings, either before arbitration panels or before the federal court

The report also establishes principles for determining the amount of compensation, if any, to be granted under the third phase of the claims procedure These are to apply whether the compensation amount is determined by an out-of-court settlement or by the other informal or formal procedures proposed With the aim of ensuring that claimants similarly injured will receive similar amounts, the Commission has identified categories of damage and specified whether and on what basis each category should be compensated In discussing the types of damage to be compensated, the report addresses such

issues as the compensation of preventive measures, compensation of economic loss unrelated to any physical injury or property damage on the part of the claimant, and governmental claims

Perhaps the most controversial part of the Commission's recommendations is that concerning latent injury, in particular, cancer The Commission identified the principal problem with respect to latent injury as the difficulty of establishing whether the injury was caused by the nuclear accident If traditional standards of proof for third party liability were applied, this difficulty would result in very few claims being compensated To improve the situation of persons suffering latent injury following a nuclear accident, the Commission recommended that such injury be dealt with in two ways Medical monitoring would be provided to all those whose exposure was at or above a given dose Secondly, compensation for diagnosed cancers would be dependent on a proxy for a direct proof of causation test based on the strength of association between the particular injury and the radiation exposure Under this approach, persons having been exposed to a specified dose or above it and suffering a certain type of cancer would be fully compensated It was also suggested that this system could incorporate, at least for the purposes of offering settlements, provisions for proportionate recovery at various levels of exposure on a stepped scale up to a level at which full compensation would be payable

REGULATIONS ON NUCLEAR TRADE

Rule on export components for use in gaseous diffusion plants

On 26th July 1990 and 23rd August 1990, the NRC published in the Federal Register (55 FR 30449, 34518) an interpretative rule to implement the decision of the Non-Proliferation Treaty Nuclear Exporters Group (the Zangger Committee) to clarify the coverage of the international nuclear export controls for specially designed or prepared assemblies and components for use in gaseous diffusion enrichment plants Portions of the NRC's export regulations had been restructured and this clarification was required so as to reflect those restructured parts of the export regulations

INTERNATIONAL REGULATORY ACTIVITIES

• *OECD Nuclear Energy Agency*

RECOMMENDATION ON A SINGLE COURT TO RULE ON COMPENSATION FOR NUCLEAR DAMAGE

At its session on 3rd October 1990, the OECD Steering Committee for Nuclear Energy recommended that Contracting Parties to the Paris Convention, when revising their national legislation, provide for a single competent court to be competent to rule on compensation under the Paris Convention for nuclear damage arising from any one nuclear incident The criteria for designating the competent court were left to each country to decide

Although Article 13(a) of the Paris Convention provides that jurisdiction for actions for compensation of damage following a nuclear incident lies with the courts of one single Contracting Party, it contains no provisions relating to the determination of a competent court in the country concerned, this being left to national law Thus the Convention does not prevent several courts of one country from being competent for the same incident and indeed, such a situation could arise under the current law of some States Parties Although the law of a majority of countries expressly lays down the principle of unity of jurisdiction, the criteria adopted for determining this specialised competence varied For example, that court could be that of the place where the incident occurs, or that where the damage is suffered, or in some cases, both

Since difficulties of a practical nature could arise where several courts have jurisdiction regarding the same nuclear incident, the Steering Committee considered that the designation of one single court would help to avoid conflicts and simplify procedures for compensating victims of nuclear incidents in all countries Party to the Paris Convention

APPOINTMENT OF THE JUDGES OF THE EUROPEAN NUCLEAR ENERGY TRIBUNAL

On 22nd June 1990, the OECD Council adopted a Resolution appointing the judges for the fifth term of office of the European Nuclear Energy Tribunal

The Tribunal, set up in 1960 pursuant to the 1957 Convention on the Establishment of a Security Control in the Field of Nuclear Energy, is also competent to settle disputes between the Governments Party to the Paris and Brussels Conventions on Nuclear Third Party Liability (see Nuclear Law Bulletin Nos 11, 22, 33)

The Convention provides that the Tribunal consists of seven independent judges appointed for a period of five years by the OECD Council The judges for this fifth term of office are

Mr Knud Verner Arildsen, Denmark
Mr Daniel Bardonnet, France
Mr Derek William Bowett, United Kingdom
Mr Günther Jaenicke, Germany
Mrs Irma Moreau-Margreve, Belgium
Mr Wouter Sturms, Netherlands
Mr. Karl Zemanek, Austria

The inaugural meeting of the Tribunal was held in Paris on 16th November 1990

• International Atomic Energy Agency

STANDING COMMITTEE ON LIABILITY FOR NUCLEAR DAMAGE

The Standing Committee on Liability for Nuclear Damage held its second meeting on 15th-19th October 1990 (see also Nuclear Law Bulletin Nos 44 and 45)

The Committee's work at this meeting can be divided into four areas possible general amendments to the civil liability regime established by the Vienna Convention on Civil Liability for Nuclear Damage, the possible establishment of a regime for compensation in addition to that provided by the operator liable, the procedure for the settlement of claims for compensation, and State liability for nuclear incidents

Significant progress was made in developing draft texts for the revision of the Vienna Convention The Committee discussed texts to serve as a framework for its future consideration on a number of topics including the geographical scope of the Convention, the application of the Convention to

military facilities, the types of damage covered by the Convention, the circumstances in which a nuclear operator will be exonerated from liability under the Convention, the financial limits of the operator's liability, the time limits for the submission of claims, and priorities to be accorded in the settlement of claims

The Committee also reached general agreement on the need for establishing a regime of supplementary compensation under the revised Vienna Convention It was envisaged that such a regime could be funded both by a system of operator risk pooling and a system of State funding The Committee discussed the various options available in designing such systems and reached general agreement on some basic principles The Committee requested the IAEA Secretariat to prepare, on the basis of this discussion, a draft text for consideration at the next meeting of the Committee

The possibility of establishing an international claims tribunal to settle claims for compensation under the Convention was also discussed Such a tribunal would replace, to some extent, the current system whereby for any one nuclear incident the courts of one Contracting Party have jurisdiction This current system has been criticised by certain countries as placing a burden on individual claimants who must bring their claims before foreign courts It has also been criticised as inappropriate in relation to any claims by States This matter will be further considered at the next meeting of the Standing Committee

On the matter of State liability, some countries supported the inclusion of elements of international State liability in the revised Vienna Convention Other delegations however considered this inappropriate

The Standing Committee will meet again in April 1991 to continue its work Formal requests have now been received for the convening of a revision conference from the one-third of Contracting Parties to the Vienna Convention required by that Convention and it is possible that such a conference will be held as early as Autumn 1991

IAEA CODE OF PRACTICE ON THE INTERNATIONAL TRANSBOUNDARY MOVEMENT OF RADIOACTIVE WASTE

At the end of the 1980s the issue of "dumping" of radioactive and hazardous wastes attracted public concern following reports of illicit exports and disposal of toxic and hazardous wastes in developing countries, notably in Africa The May 1988 Summit of the Organisation of African Unity (OAU) adopted a resolution [CM/Res 1153 (XLVIII)] which condemned such practices and requested the IAEA to assist African countries in establishing appropriate mechanisms for monitoring and controlling the movement and disposal of radioactive wastes in Africa At the request of Nigeria, the issue of transboundary movement and "dumping" of radioactive wastes was discussed in the governing bodies of the IAEA

In resolution GC(XXXII)/RES/490 "Dumping of Nuclear Waste", adopted in September 1988, the IAEA General Conference requested the Director General, 'to establish a representative technical working group of experts with the objective of elaborating an internationally agreed code of practice for international transactions involving nuclear wastes based on, inter alia, a review of current national and international laws and regulations on waste disposal"

The Technical Working Group set up was composed of experts and observers from Member States and international organisations It met twice - from 22nd to 25th May 1989 and from 5th to 9th February 1990 During its first meeting, the Group discussed the basic principles which might be included in a Code of Practice, defined what wastes should be subject to the Code and examined current national laws and regulations on waste disposal and relevant international instruments, including the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal During its second meeting, the Group agreed on and adopted the "Code of Practice on the International Transboundary Movement of Radioactive Waste" and recommended it for consideration and adoption by the Agency's policy-making organs

The Code of Practice establishes a set of principles designed to serve as guidelines in ensuring the safety of international transboundary movements of radioactive waste The Code affirms the sovereign right of every State to prohibit the movement of radioactive waste into, from or through its territory It provides that such movements should take place only when they are authorised by all States involved in the movement (that is, "with the prior notification and consent of the sending, receiving and transit States"), when all stages of the movement can be conducted in a manner consistent with international safety standards and when all States involved in the movement have the administrative and technical capacity and regulatory structure to fulfil their respective responsibilities for the movement in a manner consistent with international safety standards The Code relies on existing relevant international standards and does not establish separate guidance in these areas

The Code is advisory in nature and its purpose is to provide States with guidelines for the development and harmonization of national policies and laws on the international transboundary movements of radioactive waste

In June 1990, the IAEA Board of Governors requested the Director General to transmit the Code of Practice to the Agency's General Conference with a recommendation to adopt the Code, ensure its wide dissemination and monitor its implementation The General Conference decided accordingly at its 34th session in September 1990 In addition, it decided to keep the question of international transboundary movement of radioactive waste under active review, including the desirability of concluding a legally binding instrument under the auspices of the IAEA

• European Communities

COMMISSION RECOMMENDATION ON THE PROTECTION OF THE PUBLIC AGAINST INDOOR EXPOSURE TO RADON (1990)

Recommendation No 143 of 21st February 1990 (published in the Official Journal of the European Communities No L 80 - OJEC - of 27th March 1990) defines a reference level above which measures aimed at reducing the radon level inside existing buildings should be considered (average annual concentration of 400 Bq/m^3 corresponding to an effective dose equivalent of 20 mSv per annum) and also a design level for future constructions (average annual concentration of 200 Bc/m^3 corresponding to an effective dose equivalent of 10 mSv per annum)

Moreover, the Recommendation recalls that when remedial or preventive measures are being determined, the principles of optimisation be applied in order to reduce exposure levels as much as possible, and underlines that, given the particular character of the problem, adequate information of the population constitutes an important element

The Commission also recommends that criteria be developed for identifying regions and sites where high indoor levels of radon are noted

COUNCIL REGULATION ON THE ESTABLISHMENT OF THE EUROPEAN ENVIRONMENT AGENCY AND THE EUROPEAN ENVIRONMENT INFORMATION AND OBSERVATION NETWORK (1990)

Regulation No. 1210 of 7th May 1990 (published in OJEC No L 120 of 11th May 1990) establishes the European Environment Agency The Agency will set up, in co-operation with the Member States, and co-ordinate a European environment information and observation network, constituted by national institutions transmitting information and contributing to the Agency's work at national level This network will provide the Commission and the Member Countries with the objective information necessary for framing and implementing environmental policies The Agency is also open to countries which are not members of the European Community but which share its concern for the objectives of the Agency

To achieve these objectives, the Agency will record and assess data on the state of the environment, draw up expert reports and ensure their broad dissemination It will provide uniform assessment criteria to ensure that data are comparable and methods of measurement harmonized Furthermore it will stimulate the development of forecasting techniques, methods of assessing the cost of damage and of preventive and restoration policies, as well as the exchange of information on "clean" technologies Its principal areas of activity comprise air and water quality and pollutants likely to affect them, the state and use of soil and natural resources, waste and hazardous chemical substances management and noise emissions The impact of nuclear energy on the

environment is not excluded from the interest areas of the Agency, which is invited to co-operate in this field with the Organisation for Economic Co-operation and Development and the International Atomic Energy Agency

The Agency will be given a legal personality so as to enable it to carry out its duties Its programme of work will be prepared by its Executive Director with the assistance of a Scientific Committee, and will be adopted by its Board of Management Its activities are financed by a subsidy from the Community and payments for services rendered

AGREEMENTS

BILATERAL AGREEMENTS

• *Australia-Singapore*

AGREEMENT CONCERNING CO-OPERATION ON THE PHYSICAL PROTECTION OF NUCLEAR MATERIALS (1989)

The above Agreement between Australia and Singapore was concluded by an Exchange of Notes on 15th December 1989 and entered into force on the same date

The Agreement, which states that both countries are Parties to the Non-Proliferation Treaty and members of the International Atomic Energy Agency, covers arrangements regarding the transshipment of Australian-origin uranium ore concentrates to Singapore

It provides that Australia will notify Singapore in advance of shipments of uranium ore concentrates, specifying the mode of transport and expected time of arrival, while Singapore will confirm their arrival and notify their return The concentrates will be physically protected in Singapore at least to the level set out in the Annex to the Agreement, in accordance with the surveillance measures currently applied in Singapore In case of theft or loss of the Australian origin uranium ore concentrates on the territory of Singapore, the latter's Government undertakes to inform as soon as possible the Government of Australia, other States and international organisations and co-operate in recovering them.

In the event both Governments become Parties to the Convention on the Physical Protection of Nuclear Material, they will consult each other to review the terms of this Agreement

• Australia - United States

AGREEMENT CONCERNING AUSTRALIAN ORES CONTAINING URANIUM OR THORIUM (1989)

The above Agreement between Australia and the United States was concluded by an Exchange of Notes on 13th December 1989 and entered into force on the same date

The Agreement concerns the procedures for treatment of ores transferred from Australia to the United States containing more than 0 05 per cent by weight of uranium, thorium or both. It provides, in particular, that such transfers are subject to the provisions of the Agreement on the Peaceful Uses of Nuclear Energy concluded between both countries on 5th July 1979

• Canada - France

ADMINISTRATIVE ARRANGEMENT FOR THE EXCHANGE OF TECHNICAL INFORMATION AND CO-OPERATION IN THE REGULATION OF NUCLEAR SAFETY (1990)

The Atomic Energy Control Board of Canada (AECB) and the French Central Service for the Safety of Nuclear Installations (SCSIN) signed the above Arrangement on 10th May 1990. The Arrangement, which entered into force on the date of its signature, will remain in effect for five years

The Arrangement provides for the exchange of information between both agencies on the regulation of nuclear facilities and intervention measures in cases of emergency. This includes information on regulatory procedures for the safety of designated nuclear facilities, notification of important events, such as serious operating incidents, reactor shutdowns ordered by the regulatory authorities, etc

• Czechoslovakia-Germany

AGREEMENT ON QUESTIONS OF COMMON INTEREST IN THE FIELD OF NUCLEAR SAFETY AND RADIATION PROTECTION (1990)

The Governments of Czechoslovakia and Germany signed the above Agreement on 30th May 1990 (Bundesgesetzblatt 1990, II, p 1307) The Agreement provides for co-operation in the field of the peaceful uses of nuclear energy and concerns, in particular, mutual exchange of information and experience with respect to nuclear installations and nuclear legislation It also makes provision for notification in the event of a nuclear incident in accordance with the 1986 IAEA Convention in this respect.

The Agreement covers nuclear reactors; installations in the nuclear fuel cycle, installations for the treatment of radioactive waste; and transport and storage of nuclear fuels and radioactive waste.

Once a year, the Contracting Parties will exchange information on the results of their measuring programmes in regard to the supervision of radioactive emissions The information will include that on installations near the border area between both countries (30 km) and may cover installations beyond that distance if a Party gives a reason for such a request According to an exchange of letters attached to the Agreement the obligation to provide information includes that on the German nuclear power plant Isar and the Czechoslovakian nuclear power plant Temelin

The Agreement entered into force on 2nd August 1990

• France-Germany

AGREEMENT ON REPROCESSING SPENT FUEL ELEMENTS FROM GERMAN NUCLEAR POWER PLANTS AT LA HAGUE (1990)

This Agreement between the French and German Governments was concluded by an Exchange of Letters on 25th April 1990 and entered into force on the same date It was published by Decree No 90-734 of 9th August 1990 in the French Official Gazette of 17th August 1990

The Agreement was concluded, in particular, having regard to the Joint Declaration of both countries on 6th June 1989 on co-operation in the peaceful uses of nuclear energy (see Nuclear Law Bulletin No 44) It provides for the reprocessing of German spent fuel elements in the French reprocessing plant at La Hague and to this effect, refers to two model contracts established jointly

The Agreement specifies that both Governments will apply the London Club Guidelines for nuclear transfers, in particular as regards physical protection and controls on retransfers It also states that the La Hague plant is regularly inspected by the International Atomic Energy Agency (IAEA) in accordance with the Agreement between France, the European Communities and the IAEA (INFCIRC/290)

• France-Japan

AMENDMENT OF THE AGREEMENT ON CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY (1990)

The Protocol to amend the above Agreement was concluded on 9th April 1990 and entered into force on 19th July 1990 The original Agreement of 26th February 1972 has been in force since 22nd September 1972 and the Agreement as amended is valid until 21st September 2017

The Protocol adds provisions for the physical protection of nuclear materials and nuclear non-proliferation It strengthens the provisions of the Agreement for transfer of sensitive technologies between supplier and recipient, including retransfers to a third country, the latter require the prior consent of the supplier country for the following facilities for enrichment, reprocessing and heavy water production, uranium enriched to 20 per cent or more, plutonium, etc The Protocol provides in particular that the nuclear material transferred under the Agreement is to be used only for "peaceful and non-explosive purposes", and that safeguards under the Agreements concluded respectively between the International Atomic Energy Agency and Japan and France will be applied to the material concerned

•Germany-Poland

AGREEMENT FOR CO-OPERATION ON RESEARCH IN THE NUCLEAR FIELD (1989)

On 10th November 1989, the Governments of Germany and Poland concluded an Agreement on co-operation in the fields of science and technology, health and medical science (BGBl 1990, II, p 302) The Agreement provides a general framework for comprehensive research in those fields According to an exchange of letters annexed to the Agreement, the scientific projects to be undertaken in the nuclear field cover reactor safety, radioactive waste, radiation protection and basic nuclear research.

The Agreement entered into force on 1st February 1990

• Japan-Republic of Korea

ARRANGEMENT FOR CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY (1990)

The Government of Japan and the Government of the Republic of Korea (South) concluded an Arrangement for co-operation in the peaceful uses of nuclear energy by an exchange of letters on 25th May 1990.

The Arrangement provides for co-operation in the field of nuclear power plant safety, radioisotope applications and environmental protection The Arrangement will be implemented by the exchange of information, scientists, engineers and other experts, as well as by joint research in the fields concerned

In addition, the Arrangement specifies that in the event of a nuclear accident or radiological emergency, both countries will act in accordance with the IAEA Conventions on Early Notification and Assistance

• Sweden-USSR

AGREEMENT ON EARLY NOTIFICATION OF A NUCLEAR ACCIDENT AND EXCHANGE OF INFORMATION ON NUCLEAR INSTALLATIONS (1988)

On 13th January 1988, Sweden and the USSR concluded an Agreement in the context of the IAEA Convention of 26th September 1986 on Early Notification of a Nuclear Accident, supplementing the provisions of this Convention with regard to direct notification and advance communication of technical information The Agreement entered into force on 3rd April 1988

The Agreement applies to facilities and activities as specified in Articles 1, 3 and 4 of the IAEA Convention; it provides for the exchange of information on the operation of nuclear installations and other technical information relevant to evaluating the possible consequences of a nuclear accident The Parties undertake also to directly inform each other promptly on any ongoing or expected release of radioactive materials or increase in radiation levels with a radiological safety significance giving rise to emergency measures inside or outside the facility concerned Exchange of information must include the measures taken in the country affected by the accident Also, the Agreement provides that representatives of the Parties will meet for consultation once a year

• USSR-IAEA

AGREEMENT ON INTERNATIONAL RESEARCH ON THE CONSEQUENCES OF THE ACCIDENT AT THE CHERNOBYL NUCLEAR POWER PLANT (1990)

An Agreement setting a framework for international research on the consequences of the accident at the Chernobyl nuclear power plant was signed on 21st September 1990 in Vienna.

The quadripartite Agreement, approved by the Board of Governors of the International Atomic Energy Agency (IAEA), establishes the basic principles governing the conduct of international research at the "Pripyat" Scientific Centre (Chernobyl Centre), defines the facilities and services to be provided by the Governments of the USSR, the Byelorussian SSR, and the Ukrainian SSR, and specifies the role of the IAEA in the development and co-ordination of research at the Centre and in the dissemination of project results

The Chernobyl area affords unique possibilities for carrying out scientific research under post-accident conditions, including some areas where radiation levels have subsided but are still above normal background levels

This led the IAEA's Secretariat to help develop the proposal, made by the Soviet Union last year, to set up the Chernobyl Centre for International Research and to provide assistance to the Soviet Union and the interested parties in establishing the Centre Proposals for an agreement to provide a framework for such co-operation were discussed between the Secretariat of the Agency and representatives from more than thirty Member States and four international organisations

A series of specific collaborative projects are expected to take shape in the coming months Examples include work on the development of decontamination techniques suitable for large areas, the movement of radionuclides, their uptake in vegetation, and their effects on plant biology, and consolidation of a shared data base on the health of populations living and working in the area

• USSR-WHO

MEMORANDUM OF UNDERSTANDING ON AN INTERNATIONAL PROGRAMME ON THE HEALTH EFFECTS OF THE CHERNOBYL ACCIDENT (1990)

On 30th April 1990, the World Heath Organisation (WHO) and the USSR Ministry of Health signed a Memorandum of Understanding to establish a programme to monitor and mitigate the adverse health effects resulting from the Chernobyl nuclear power plant accident The programme is designed to follow the exposed persons over their lifetimes to determine the detrimental health effects that become apparent, and at the same time ensure that their treatment is co-ordinated and the best available

This programme will be established in a new International Centre in Obninsk, in the Kaluga Region about 100 km south of Moscow, and will accommodate not only diagnostic and therapeutic facilities but also epidemiological data on the health effects and doses received It is anticipated that a wide spectrum of diseases from psychosomatic illness to induced cancers will need to be investigated

Following the meeting of a Scientific Advisory Committee to advise the Centre on policy and likely areas of investigation, WHO Member States will be invited to participate in the programme of the Centre which are of interest to them, and to provide support, which may be financial, by furnishing equipment or scientific expertise. A further meeting to discuss the specific support that might be available will be held in Obninsk in the Spring of 1991

This initiative will not only provide the optimum medical surveillance and treatment for the exposed persons ii the Ukraine, Byelorussia and the Russian Federation, but will provide the rest of the world with the research and epidemiological data so necessary to evaluate the effects of such a severe accident

MULTILATERAL AGREEMENTS

CONVENTIONS ON EARLY NOTIFICATION, ON ASSISTANCE AND ON PHYSICAL PROTECTION

1 Convention on Early Notification of a Nuclear Accident

The Convention, concluded on 26th September 1986 entered into force on 27th October 1986 (the text of the Convention is reproduced in the Supplement to Nuclear Law Bulletin No 38) A table of its status of ratifications and accessions was given in Nuclear Law Bulletin No 43 (see also Nuclear Law Bulletin No 44) The table below brings its status up to date

Korea, Republic of	8th June 1990 (access)
Nigeria	10th Aug 1990 (ratif)
Romania	12th June 1990 (access)
Saudi Arabia	3rd Nov 1989 (access)
World Meteorological Organisation	17th April 1990 (access)

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

The Convention, concluded on 26th September 1986, entered into force on 26th February 1987 (the text of the Convention is reproduced in the Supplement to Nuclear Law Bulletin No 38) A table of its status of ratifications and accessions was given in Nuclear Law Bulletin No 43 (see also Nuclear Law Bulletin No 44) The table below brings its status up to date

Austria	21st Nov 1989 (ratif)
Korea, Republic of	8th June 1990 (access)
Libyan Arab Jamahiriya	27th June 1990 (access)
Nigeria	10th Aug 1990 (ratif)
Romania	12th June 1990 (access)
Saudi Arabia	3rd Nov 1989 (access)
World Meteorological Organisation	17th April 1990 (access)

3 Convention on the Physical Protection of Nuclear Material

The above Convention of 3rd March 1980 entered into force on 8th February 1987 The status of signatures and ratifications of the Convention are given in Nuclear Law Bulletin No 43 Since then, Finland accepted the Convention on 22nd September 1989 and Nigeria ratified it on 10th August 1990

AFRICAN REGIONAL CO-OPERATIVE AGREEMENT FOR RESEARCH, DEVELOPMENT AND TRAINING RELATED TO NUCLEAR SCIENCE AND TECHNOLOGY

The above Agreement of 21st February 1990 which entered into force on 4th April 1990 was reported in Nuclear Law Bulletin No 45 The following tables gives its present status

Kenya	17th Sept 1990 (accept)
Libyan Arab Jamahiriya	7th Aug. 1990 (accept)
Madagascar	31st July 1990 (accept)
Morocco	24th Aug 1990 (accept)
Nigeria	19th June 1990 (accept.)

TEXTS

• IAEA

EXTRACTS FROM AN INFORMATION NOTE

ON THE ECONOMIC AND SOCIAL CONSEQUENCES OF THE ACCIDENT AT THE CHERNOBYL NUCLEAR POWER PLANT, SUBMITTED BY THE DELEGATIONS OF THE UNION OF SOVIET SOCIALIST REPUBLICS, THE BYELORUSSIAN SOVIET SOCIALIST REPUBLIC AND THE UKRAINIAN SOVIET SOCIALIST REPUBLIC TO THE JULY 1990 SESSION OF THE ECONOMIC AND SOCIAL COUNCIL OF THE UNITED NATIONS

(INFCIRC/383)

INTRODUCTION

In terms of its scale and the damage caused, the accident at the Chernobyl nuclear power plant on 26th April 1986 was one of the most serious accidents to have occurred in the entire history of the utilization of atomic energy From the viewpoint of radioactive contamination of the biosphere, it can be ranked as a global disaster

The accident involved the discharge of substantial quantities of radioactive substances into the environment In the area affected (including the evacuation zone), 76 100 km^2 were contaminated with caesium-137 at a level of between 1 and 5 Ci/km^2, and 28 100 km^2 at a level of above 5 Ci/km^2 These areas have a population of some 4 million, more than 800 000 of whom live in regions where the contamination level is above 5 Ci/km^2

The accident disrupted the previous way of life and economic activity in various parts of the RSFSR, Ukrainian SSR and Byelorussian SSR In just the first year after the accident, 144 000 hectares of farm land were taken out of use, forestry work was stopped on an area of 492 000 hectares, and many industrial and agricultural enterprises ceased operations

In the spring and summer of 1986, 116 000 people were evacuated from the danger zone As a result of the accident or of their work in dealing with its immediate consequences, 30 people were killed or died from acute radiation sickness and many received high doses of radiation

Three periods can be distinguished in the efforts to deal with the after effects of the accident.

The first period, from April to May 1986, involved making initial estimates of the scale of the disaster and the radiation situation, taking action to prevent a spontaneous chain reaction and radioactive emissions from the damaged reactor, identifying areas exposed to radioactive contamination, and evacuating the population and farm animals from a 30-kilometre zone At this stage, the main danger to personnel and the public at large was from external exposure, as well as from internal irradiation due mainly to ingesting or inhaling iodine-131 and 132

The second period, from summer 1986 to 1987, involved mapping out the contaminated areas, construction of the "Encasement" ("Sarcophagus"), decontamination of the working area of the nuclear power plant, restarting of the No 1, No 2 and No. 3 reactors, measures to protect water resources from radioactivity, decontamination of settlements, scientific investigations and special measures on agricultural land The main sources of radioactive contamination during this period were ruthenium-106, cerium-141 and 144, caesium-137 and 134

The third period, from 1988 to the present day, has involved stabilizing the radiation situation in the 30-kilometre zone and other areas, getting the organisation of work and dosimetric monitoring set up properly, carrying out operations to make the "Encasement" more secure, decontaminating of settlements, relocating inhabitants away from contaminated areas, taking measures to reduce contamination of agricultural produce and reorganising agricultural activities, collating material relating to the accident, and developing and launching of a long-term programme for dealing with the after effects of the accident The main sources of radiation were by this time long-lived radionuclides of caesium-137 (for the most part) and strontium-90

Notwithstanding the enormous efforts - unprecedented anywhere else in the world - to deal with the after effects of the accident at the Chernobyl nuclear power plant and despite the considerable financial, material and technical resources committed, a reliable system for ensuring the safety of people affected by radiation is still not in place

A State Union-Republic programme of urgent measures has been drawn up in the USSR for the years 1990-1992 to deal with the after effects in the RSFSR, Byelorussian SSR and Ukrainian SSR of the accident at the Chernobyl nuclear power plant

The main urgent measures provided for in the programme are

- relocation of inhabitants away from settlements which were subjected to radioactive contamination as a result of the accident at the Chernobyl nuclear power plant and in which the population's safety from radiation cannot be ensured for long periods of residence, and the resettlement of people (especially families with children up to

14 years of age and pregnant women) who have expressed the desire to move out of areas where restrictions have been imposed on the consumption of local food products,

- implementation of a range of measures in the prohibited zone of the Chernobyl nuclear power plant to ensure the nuclear and radiation safety of installations in that zone, to treat and where necessary bury radioactive waste from the plant, and to prevent the spread of radioactivity beyond this zone,

- improvement of medical health services for the various population groups who suffered as a result of the Chernobyl accident,

- introduction of special measures with regard to agro-industrial production under conditions of radioactive contamination,

- supply of "clean" food products to people living in contaminated areas,

- provision of regular information to the population on work undertaken to deal with the after effects of the accident, and action to educate the public with regard to radiation safety,

- scientific study of the problems involved in dealing with the after effects of the accident and ensuring normal living conditions in the contaminated areas

. .

Medical aspects of the accident

The accident at the Chernobyl nuclear power plant has required major reorganisation of the whole system of health care Both Soviet and foreign experience in radiation medicine was called upon in dealing with the after effects of the accident.

... .

In the light of changing radiation conditions, the USSR Ministry of Health set the following time-limited radiation dose levels (internal and external) for the population 10 rem for the first year after the accident, 3 rem for the second, 2 5 rem for the third and 2 5 rem for the fourth The prompt introduction of emergency standards and implementation of a range of protective measures made it possible to reduce the total radiation doses received by the population by a factor of 2.5 compared with the doses predicted, and also to reduce the dose of internal radiation by a factor of 2-4

According to available data, the average individual doses of radiation received by the population in contaminated areas over the period 1986-1989 were 6 rem in the RSFSR and 5 6 rem in the Ukrainian and Byelorussian SSRs Of this population 62 1 per cent received radiation doses of between 1 and 5 rem,

33 6 per cent between 5 and 10 rem, and 1 2 per cent between 15 and 17 3 rem A dose of 17 3 rem was the maximum allowed for the period from April 1986 to 1st January 1990.

Public health-clinic monitoring was organised and a State register set up to ensure regular checks on the state of health of people living in the contaminated areas and of those involved in dealing with the after effects of the accident at the nuclear power plant Scientific and methodological guidelines were established with regard to clinical treatment for persons affected by radiation as a result of the accident at the Chernobyl nuclear power plant

In assessing the main demographic indicators (birth rate, mortality, natural growth rate) for the population in the monitored areas of the RSFSR, Ukrainian SSR and Byelorussian SSR, it must be noted that while they are for the most part comparable to those for the country as a whole, and although specially conducted surveys have not revealed specifically radiation-related changes in the state of health of children or adults, the natural growth rate of the population in the Byelorussian SSR, for example, fell from 7 4 per 1 000 in 1986 to 5 1 per 1 000 in 1989

Clinical monitoring and thorough check-ups have, along with migration processes (departure of young persons from contaminated areas), helped to increase the rate of detection of diseases and functional disorders among the population Many of these are indirect consequences of the accident, for example, inferior living conditions due to the safety restrictions imposed on the utilization of natural resources and the consumption of certain local food products

On the basis of an analysis of research both in the USSR and abroad to estimate the biological effects of ionizing radiation over various dose ranges, a dose of 35 rem was recommended as the maximum over a 70-year life span This limit was adopted as the criterion for determining whether or not protective measures should be maintained in particular settlements, and also for decisions in future whether to move inhabitants from settlements in which it is not possible to ensure that the maximum will not be exceeded under normal living conditions There is some disagreement among the country's scientists at present regarding the level of the maximum dose

The Soviet Government accordingly has decided to give priority to move inhabitants out of settlements where the dose limit cannot be complied with In addition, it is planned to pay suitable compensation to citizens relocated away from settlements where restrictions on the consumption of local food products have been imposed, and to find them housing and employment

Work is now continuing in the Soviet Union on a plan that would take account of the effects on man of various harmful factors, whether or not due to radiation This work is expected to be completed in October 1990

An important role in finalising this plan can be played by the international organisations

In this connection, it should be noted that in late 1989 the Soviet Union requested IAEA to co-ordinate efforts to organise and implement a project and an international expert appraisal of the plan drawn up by the USSR to provide safe living conditions in the areas subjected to radioactive contamination after the Chernobyl accident, and an evaluation of the effectiveness of measures taken in these areas to protect public health The IAEA Secretariat supported this request and the project to carry out an expert appraisal with the participation of WHO, other international organisations and a group of independent experts from a number of countries is now being implemented*

In view of the importance for the international community of the experience gained by the Soviet Union in dealing with the consequences of the disaster, and also the importance for the Soviet Union of being able to draw on international experience, it seems desirable to establish a comprehensive international programme of work in the following fields

- training and retraining medical specialists, primary haematologists, endocrinologists, oncologists, immunologists, epidemiologists, geneticists, psychologists, paediatricians, obstetricians and gynaecologists, health administrators and specialists in the field of human reproduction and family planning,

- improving knowledge of radiation medicine and radiation security among medical workers and people living in contaminated areas For this purpose it would be helpful to prepare international handbooks on radiation medicine and security, to set up an international data bank for these areas and to prepare pamphlets for the general public

- arranging for international experts to review the plans for dealing with the consequences of the Chernobyl disaster and give advice on protecting the population against radiation,

- carrying out joint research on the health of different groups of people living in contaminated territories,

- developing ways and means of diagnosing, curing and preventing diseases and functional disorders,

- protecting the environment and working out the optimum principles for settlement of the population

A definite contribution would be made to efforts to deal with these problems by implementation of the measures set forth in the memorandum signed in April this year between the USSR Ministry of Health and WHO on the

---

* See the "Agreements" Chapter in this issue of the Bulletin

establishment of a long-term global programme for monitoring and minimising the medical consequences of the Chernobyl disaster and on the setting up of an international radiation medicine centre in Obnisk*

The international community could help by arranging long-term programmes for children from the areas affected by the Chernobyl disaster to go abroad for treatment and convalescence

Evacuation of inhabitants from areas affected by radioactive contamination

One effective way of protecting people against the dangers of radiation is to evacuate them from heavily contaminated areas In the spring and summer of 1986, some 116 000 people were evacuated from the danger area - including 92 000 from the Ukrainian SSR, over 24 000 from the Byelorussian SSR and about 200 from the RSFSR The evacuees had new houses built for them in rural areas, or were given flats in towns, and they were paid compensation for the property they had lost

Determination of the long-term limit for exposure to radiation led to further evacuations from areas contaminated by radionuclides beginning in 1989

It was decided by the Governments of the USSR, the Byelorussian SSR and the Ukrainian SSR to resettle the inhabitants of various settlements contaminated by the Chernobyl disaster in Bryansk, Kiev, Zhitomir, Mogilev and Gomel provinces where it would not be possible through decontamination and soil improvement measures to keep the individual dose of radiation they received over the course of their lives within the established limit In 1990-1991, because of the radiation factor, and also because of social considerations, it is planned to evacuate a total of 395 settlements (73 000 inhabitants), including 306 in the Byelorussian SSR (38 600 inhabitants), 22 in the Ukrainian SSR (19 200 inhabitants) and 67 in Bryansk province in the RSFSR (15 200 inhabitants)

Decrees have been adopted by the Government fixing the procedure and conditions for the payment of financial compensation to certain groups of the population for the property they have lost, and also for the payment of expenses connected with moving to a new place of residence They also lay down the procedure for providing the citizens with housing at their new places of residence and arranging for work to be found for them

The appropriate international organisations could help with this work by acting as intermediaries to arrange supplies of equipment for children's pre-school institutions, schools and cultural centres and for building enterprises

---

* See the "Agreements" Chapter in this issue of the Bulletin

Social welfare for people living in areas affected by radioactive contamination

In places where radioactive contamination is insignificant, and it is not intended to evacuate the population, measures are planned to reduce the amount of exposure to radiation still further and to improve social conditions and services

It is planned to pay cash benefits to people in less contaminated areas as well, in order to compensate them for the cost of obtaining extra food supplies because of the partial restrictions on the consumption of milk and, in some cases, other food products from local farms and private plots

Among residents of contaminated areas, those who work have been given extra vacation, women have been allowed additional maternity and child-care leave, working pensioners receive full pensions regardless of what they earn, benefits for needy families and pensions for non-working pensioners and persons disabled from childhood have been increased, and the conditions for the payment of State pensions have been eased

In order to ensure that the foodstuffs available to the population in contaminated areas meet the recommended standards, these areas are receiving additional supplies of meat and meat products, milk and milk products, vegetable oil, vegetables and melons, berries and fruit, particularly citrus fruit

Acute problems are arising in finding work for different groups of the population, providing for their social and psychological rehabilitation and organising teaching in schools The organisations belonging to the United Nations system could make a substantial contribution to efforts to deal with these problems

The cultural ecology

The Chernobyl accident was not just a radiation disaster, but also a tragedy in the history of the national culture It is impossible to make good all the damage done, because it is permanent People are only just beginning to grasp the extent of it The most that can be done is to adapt to the new post-Chernobyl situation, from which there is no going back The transformation that has occurred affects not just individuals, but whole ethno-social groups

It seems important that a comprehensive international humanistic, ecological and cultural programme should be set up under the auspices of UNESCO to save the main cultural assets which have been handed down since time immemorial in the affected regions

Agro-industrial production and forestry in areas contaminated by radioactivity

The Chernobyl disaster did serious damage to agriculture and forestry About 1 3 million hectares of agricultural land were subjected to radioactive contamination with a caesium-137 density of 5 Ci/km^2 or more Hundreds of thousands of hectares of contaminated land were taken out of production, and the working of large areas of forest was halted

Under the State programme of work for 1990-1992 a combination of measures are to be carried out which will permit rational and safe use to be made of the agricultural and forest land in the areas where the population will live

It seems desirable to seek the co-operation of foreign organisations and institutions under the auspices of the United Nations in obtaining advisory services and technical expertise for the organisation of agricultural production in contaminated areas, the establishment of the appropriate infrastructure in those areas, the organisation of small-scale enterprises for local processing of the produce and the training and retraining of staff in agricultural radiology

Decontamination

Decontamination operations on land, buildings and installations were mainly carried out by units of the armed forces In the period since the disaster, more than 24 million m^2 of indoor premises and more than 6 million m^2 of land have been decontaminated, and a large amount of radioactive waste has been taken away and buried

In 1989 the decision was taken to evacuate a large number of residents from the area contaminated with radionuclides to clean areas (this operation is now being carried out on a large scale), which made it possible to limit the volume of decontamination work in 1990 and carry it out selectively at particular settlements

Expenditure and losses resulting from the Chernobyl disaster

Direct losses of fixed assets and other material goods together with expenditure on action to deal with the consequences of the disaster amounted by themselves to 9 2 billion roubles in 1986-1989 They include losses of productive and non-productive fixed assets amounting to 900 million roubles, lost output in agriculture and other sectors amounting to about 1 2 billion roubles, expenditure on the construction of housing, social and cultural

facilities and services for the population affected by the Chernobyl disaster road-building, measures to protect forests and water, decontamination operations and the provision of gas supplies to settlements amounting to 2 94 billion roubles, various kinds of compensation paid to the population amounting to 1 25 billion roubles, payment of cash benefits because of restrictions on the consumption of agricultural products from local farms and private plots amounting to 180 million roubles

Indirect losses, however, represent an incomparably larger amount The expenditure in question has been financed mainly from the State budget Apart from budgetary allocations by the USSR State insurance agency, insurance payments have been made to individuals and agricultural and co-operative organisations in the amount of 274 million roubles The total expenditure also included money contributed voluntarily by individuals and organisations to the assistance fund for dealing with the after-effects of the Chernobyl disaster in the amount of 532 million roubles

The Supreme Soviet of the USSR has appealed to parliamentarians in all countries and to international organisations to provide assistance in dealing with the problems arising from the Chernobyl disaster

The Presidium of the Supreme Soviet and the Council of Ministers of the Byelorussian SSR made a similar appeal on 20th February 1990

The Council of Ministers of the Ukrainian SSR has appealed to Governments and public bodies in foreign countries and to international organisations for large-scale international co-operation in dealing with the consequences of the Chernobyl disaster

BIBLIOGRAPHY

• Canada

L'energie nucleaire et le droit Les autorisations, l'environnement, les contrôles judiciaires et politiques. Etude comparative, by Denis Bourque, ed. Yvon Blais inc , Cowansville, Quebec, 1990, 903 pages

This publication analyses the different licensing procedures required for nuclear activities The author makes a comparative analysis of Canadian, French, English and American licensing regulations, commenting on solutions adopted by the various systems and proposes a series of reforms he considers desirable

The first part of the book describes the operation of a nuclear power plant and its impact on health and safety and on the environment. It also deals with the setting up, the duties and the powers of the authorities competent for regulating nuclear activities, as well as with site selection and licensing of the construction and operation of nuclear power plants In addition, the judicial controls exercised over all stages of the licensing procedure are examined

The second part contains an analysis of possible reforms aiming at improving the credibility and efficiency of licensing procedures The author explains the advantages of these reforms, taking into account the legal character and aims of the licensing procedure The author proposes, inter alia, a different sharing of legislative competence in this field.

A series of Annexes complete this work They contain mainly explanatory diagrams of licensing procedures in force in the countries dealt with

• NEA

Nuclear Legislation - Third Party Liability, OECD Nuclear Energy Agency, Paris, 1990, 279 pages

The OECD Nuclear Energy Agency (NEA) regularly publishes analytical studies on the different aspects of nuclear legislation, keeping abreast of developments in this field. This latest study covers the third party liability

of operators of nuclear installations and compensation for nuclear damage The last NEA study dealing with this question dates back to 1976 and changes in the legislation of many countries have warranted publication of this new study

This revised study now includes countries worldwide with specific legislation on third party liability or other provisions applicable to the liability of nuclear operators and on which the Secretariat has received authoritative information Most laws on the subject have been amended since 1976, in general raising the nuclear operator's limit of liability and in some cases doing away altogether with that limitation Furthermore, since the Paris Convention and the Brussels Supplementary Convention have been modified, the latter in particular, to increase the amount of compensation to be paid at State level, this has also led to a consequent revision of the national implementing laws In addition, a Joint Protocol now links the Vienna Convention and the Paris Convention, increasing their geographical scope for the greater protection of victims of a nuclear incident

The study is divided into three parts The first part covers the international Conventions on nuclear third party liability, explaining their principles and provisions and giving their status of signatures and ratifications the second and most important part deals with national legislation on the liability of operators of nuclear installations according to a plan, standardised to the extent possible, to facilitate research and comparison The last part contains a brief analysis of laws governing the liability of operators of nuclear-powered ships

Paris Convention: Decisions, Recommendations, Interpretations, OECD Nuclear Energy Agency, Paris, 1990, 52 pages

The 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy empowers the OECD Steering Committee for Nuclear Energy to make certain decisions which are binding on Contracting Parties to that Convention These decisions concern technical matters - additions to the categories of nuclear installations covered by the Convention, and the exclusion of nuclear installations or nuclear substances from the coverage of the Convention where this is warranted due to the small extent of the risks involved In addition, the Steering Committee, pursuant to its general powers under the NEA Statute and the OECD Council, pursuant to its general powers under the OECD Convention, may adopt recommendations or interpretations concerning the Paris Convention

These decisions, recommendations and interpretations complete the regime established by the Paris Convention

This bilingual booklet in English and French contains all such decisions, recommendations and interpretations in force as at 1st November 1990 This is the second edition of the booklet, replacing the 1984 edition which had become outdated In addition to the texts of the instruments themselves, grouped according to the Article to which they relate, explanatory notes are included on their grounds and effect

Protection of the Population in the Event of a Nuclear Accident A Basis for Intervention, OECD Nuclear Energy Agency, Paris, 1990, 68 pages

Since the accident at Chernobyl, international organisations have sought to harmonize principles and criteria for protecting the public in the event of a nuclear accident, and the OECD Nuclear Energy Agency (NEA) has actively contributed to that work

The report "Nuclear Accidents Intervention Levels for Protection of the Public", published by NEA in January 1989, contained a critical review of the emergency response actions and intervention criteria adopted in Member countries during the Chernobyl accident It identified those aspects of existing international guidance and recommendations where clarification, expansion or modification was needed and provided preliminary guidance on specific aspects of emergency response planning and the establishment and application of intervention criteria That report contributed to the parallel effort by several international organisations (ICRP, IAEA, WHO, FAO, CEC)

This new report outlines the status of relevant international activities in the period following the preparation of the 1989 report, discusses the intervention principles and describes both the proposed accident management system and a general scheme for its application It is to be noted that the principles and criteria for intervention discussed, although developed with specific reference to reactor accidents, apply equally well to activities and possible accidents at other nuclear facilities

This report develops and completes the concepts studied in the 1989 report It is not intended to be taken as definitive guidance, but rather as a contribution to the international debate for the improvement and harmonization of national and international criteria for the protection of the public in the event of a nuclear accident

(It is recalled that a study on the Development and Harmonization of Intervention Levels nationally and internationally has been published in Nuclear Law Bulletin No 45)

• IAEA

The Regulatory Process for the Decommissioning of Nuclear Facilities, IAEA Safety Series No 105, Vienna, 1990, 23 pages

The objective of this publication is to provide general guidance to IAEA Member States for regulating the decommissioning of nuclear facilities within the established nuclear regulatory framework The Guide describes in general

terms the procedures for decommissioning nuclear facilities and the considerations to be applied in the development of decommissioning regulations and guides It also delineates the responsibilities of the regulatory authorities and licensees in the procedures

The provisions of this Guide are intended to apply to all facilities in the nuclear fuel cycle and large industrial installations using long lived radionuclides The Guide deals primarily with decommissioning after planned shutdown Most provisions, however, are also applicable to decommissioning after an abnormal event, once cleanup operations have been terminated

The Annex to the Guide gives a model list of contents for a decommissioning plan, together with an illustration of the main interconnection between the licensees and the regulatory authorities

• CEC

Community Radiation Protection Legislation [Doc XI-3539/90], Brussels, 1990, 285 pages

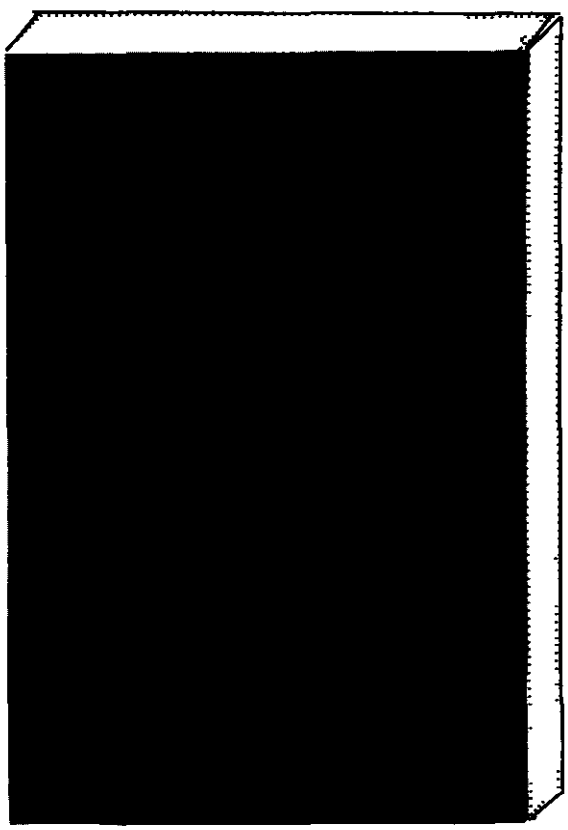
This publication of the European Communities contains all the texts of Community legislation in the field of radiation protection in force at present The relevant provisions of the Euratom Treaty are reproduced together with the regulations, directives and decisions and recommendations adopted in implementation of those provisions Those include, inter alia, the basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation, the basic measures for the radiation protection of persons undergoing medical examination or treatment, maximum permitted levels of radioactive contamination of foodstuffs following a nuclear accident, Community arrangements for early exchange of information in the event of a radiological emergency, etc

Just Out

NUCLEAR LEGISLATION : T H I R D P A R T Y L I A B I L I T Y

Many countries have adopted a special liability and insurance system for operators of nuclear installations as regards damage caused by a nuclear incident This book describes the relevant international Conventions and studies the national legislation of the countries listed below using a standard framework to facilitate research and comparison The national studies decribe the nature of the liability, the type of nuclear damage covered, and the conditions for taking out financial security and for compensating victims. Where applicable, the studies are supplemented by information on the liability of operators of nuclear-powered ships.

Countries covered
Argentina, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, People's Republic of China, Czechoslovakia, Denmark, Finland, France, Federal Republic of Germany, Hungary, Indonesia, Italy, Japan, Republic of Korea, Malaysia, Mexico, Netherlands, Norway, Philippines, Poland, Romania, South Africa, Spain, Sweden, Switzerland, Taiwan, United Kingdom, United States, Yugoslavia



ISBN 92-64-13421-2
£ 25 US$ 45 FF 210 DM 82 ¥ 7500

WHERE TO OBTAIN OECD PUBLICATIONS – OÙ OBTENIR LES PUBLICATIONS DE L'OCDE

Argentina – Argentine
Carlos Hirsch S.R.L.
Galería Güemes, Florida 165 4° Piso
1333 Buenos Aires Tel. 30.7122, 331 1787 y 331.2391
Telegram. Hirsch–Baires
Telex: 21112 UAPE–AR. Ref. s/2901
Telefax:(1)331–1787

Australia – Australie
D.A. Book (Aust.) Pty Ltd.
648 Whitehorse Road, P.O.B 163
Mitcham, Victoria 3132 Tel. (03)873.4411
Telex: AA37911 DA BOOK
Telefax: (03)873.5679

Austria – Autriche
OECD Publications and Information Centre
4 Simrockstrasse
5300 Bonn (Germany) Tel. (0228)21.60.45
Telex. 8 86300 Bonn
Telefax: (0228)26.11.04

Gerold & Co.
Graben 31
Wien I Tel. (0222)533.50.14

Belgium – Belgique
Jean De Lannoy
Avenue du Roi 202
B–1060 Bruxelles Tel. (02)538.51.69/538.08.41
Telex: 63220 Telefax: (02) 538.08.41

Canada
Renouf Publishing Company Ltd.
1294 Algoma Road
Ottawa, ON K1B 3W8 Tel. (613)741 4333
Telex 053–4783 Telefax: (613)741.5439
Stores.
61 Sparks Street
Ottawa, ON K1P 5R1 Tel. (613)238.8985
211 Yonge Street
Toronto, ON M5B 1M4 Tel. (416)363.3171

Federal Publications
165 University Avenue
Toronto, ON M5H 3B8 Tel. (416)581 1552
Telefax: (416)581 1743

Les Publications Fédérales
1185 rue de l'Université
Montréal, PQ H3B 3A7 Tel.(514)954–1633

Les Éditions La Liberté Inc.
3020 Chemin Sainte–Foy
Sainte–Foy, PQ G1X 3V6 Tel. (418)658.3763
Telefax: (418)658.3763

Denmark – Danemark
Munksgaard Export and Subscription Service
35 Norre Sogade, P.O Box 2148
DK–1016 Kobenhavn K Tel. (45 33)12.85 70
Telex· 19431 MUNKS DK Telefax: (45 33)12.93.87

Finland – Finlande
Akateeminen Kirjakauppa
Keskuskatu 1 P.O Box 128
00100 Helsinki Tel. (358 0)12141
Telex 125080 Telefax: (358 0)121 4441

France
OECD/OCDE
Mail Orders/Commandes par correspondance.
2 rue André–Pascal
75775 Paris Cedex 16 Tel. (1)45.24.82.00
Bookshop/Librairie:
33 rue Octave–Feuillet
75016 Paris Tel. (1)45.24.81.67
(1)45.24.81.81

Telex· 620 160 OCDE
Telefax: (33–1)45.24.85.00

Librairie de l'Université
12a, rue Nazareth
13602 Aix–en–Provence Tel. 42.26.18.08

Germany – Allemagne
OECD Publications and Information Centre
Schedestrasse 7
5300 Bonn 1 Tel. (0228)21.60.45
Telefax: (0228)26.11.04

Greece – Grèce
Librairie Kauffmann
28 rue du Stade
105 64 Athens Tel. 322.21.60
Telex 218187 LIKA Gr

Hong Kong
Swindon Book Co. Ltd.
13 – 15 Lock Road
Kowloon, Hongkong Tel. 366 80 31
Telex: 50 441 SWIN HX
Telefax: 739 49 75

Iceland – Islande
Mál Mog Menning
Laugavegi 18, Pósthólf 392
121 Reykjavik Tel. 15199/24240

India – Inde
Oxford Book and Stationery Co.
Scindia House
New Delhi 110001 Tel. 331.5896/5308
Telex. 31 61990 AM IN
Telefax: (11)332.5993
17 Park Street
Calcutta 700016 Tel. 240832

Indonesia – Indonésie
Pdii–Lipi
P.O Box 269/JKSMG/88
Jakarta 12790 Tel. 583467
Telex: 62 875

Ireland – Irlande
TDC Publishers – Library Suppliers
12 North Frederick Street
Dublin 1 Tel. 744835/749677
Telex. 33530 TDCP EI Telefax 748416

Italy – Italie
Libreria Commissionaria Sansoni
Via Benedetto Fortuni, 120/10
Casella Post. 552
50125 Firenze Tel. (055)645415

Telex. 570466 Telefax. (39.55)641257

Via Bartolini 29
20155 Milano Tel. 365083
La diffusione delle pubblicazioni OCSE viene assicurata dalle principali librerie ed anche da:
Editrice e Libreria Herder
Piazza Montecitorio 120
00186 Roma Tel. 679 4628
Telex. NATEL I 621427

Libreria Hoepli
Via Hoepli 5
20121 Milano Tel. 865446
Telex 31.33 95 Telefax: (39.2)805.2886

Libreria Scientifica
Dott. Lucio de Biasio "Aeiou"
Via Meravigli 16
20123 Milano Tel. 807679
Telefax: 800175

Japan – Japon
OECD Publications and Information Centre
Landic Akasaka Building
2–3–4 Akasaka, Minato–ku
Tokyo 107 Tel. 586.2016
Telefax: (81.3)584 7929

Korea – Corée
Kyobo Book Centre Co. Ltd.
P.O. Box 1658, Kwang Hwa Moon
Seoul Tel. (REP)730 78.91
Telefax: 735.0030

Malaysia/Singapore – Malaisie/Singapour
University of Malaya Co–operative Bookshop Ltd.
P.O Box 1127 Jalan Pantai Baru 59100
Kuala Lumpur
Malaysia Tel. 756.5000/756.5425
Telefax: 757.3661

Information Publications Pte. Ltd.
Pei–Fu Industrial Building
24 New Industrial Road No. 02–06
Singapore 1953 Tel. 283 1786/283 1798
Telefax: 284.8875

Netherlands – Pays–Bas
SDU Uitgeverij
Christoffel Plantijnstraat 2
Postbus 20014
2500 EA's–Gravenhage Tel. (070 3)78.99 11
Voor bestellingen: Tel. (070 3)78.98.80
Telex. 32486 stdru Telefax. (070 3)47.63.51

New Zealand – Nouvelle–Zélande
Government Printing Office
Customer Services
33 The Esplanade – P.O Box 38–900
Petone, Wellington
Tel. (04) 685–555 Telefax: (04)685–333

Norway – Norvège
Narvesen Info Center – NIC
Bertrand Narvesens vei 2
P.O. Box 6125 Etterstad
0602 Oslo 6 Tel. (02)57.33.00
Telex. 79668 NIC N Telefax: (02)68.19.01

Pakistan
Mirza Book Agency
65 Shahrah Quaid–E–Azam
Lahore 3 Tel. 66839
Telex: 44886 UBL PK. Attn. MIRZA BK

Portugal
Livraria Portugal
Rua do Carmo 70–74
Apart. 2681
1117 Lisboa Codex Tel. 347 49.82/3/4/5
Telefax: 37 02 64

Singapore/Malaysia – Singapour/Malaisie
See "Malaysia/Singapore – "Voir "Malaisie/Singapour"

Spain – Espagne
Mundi–Prensa Libros S.A.
Castelló 37 Apartado 1223
Madrid 28001 Tel. (91) 431.33.99
Telex: 49370 MPLI Telefax 575 39 98
Librería Internacional AEDOS
Consejo de Ciento 391
08009 –Barcelona Tel. (93) 301–86–15
Telefax. (93) 317–01–41

Sweden – Suède
Fritzes Fackboksföretaget
Box 16356, S 103 27 STH
Regeringsgatan 12
DS Stockholm Tel. (08)23.89.00
Telex: 12387 Telefax: (08)20.50.21
Subscription Agency/Abonnements.

Wennergren–Williams AB
Box 30004
104 25 Stockholm Tel. (08)54 12.00
Telex: 19937 Telefax: (08)50.82.86

Switzerland – Suisse
OECD Publications and Information Centre
Schedestrasse 7
5300 Bonn 1 Tel. (0228)21.60.45
Telefax. (0228)26.11.04

Librairie Payot
6 rue Grenus
1211 Genève 11 Tel. (022)731.89.50
Telex: 28356
Subscription Agency – Service des Abonnements
4 place Pépinet – BP 3312
1002 Lausanne Tel. (021)341.33.31
Telefax. (021)341.33.45

Maditec S.A.
Ch. des Palettes 4
1020 Renens/Lausanne Tel. (021)635.08.65
Telefax. (021)635.07.80
United Nations Bookshop/Librairie des Nations–Unies
Palais des Nations
1211 Genève 10 Tel. (022)734.60.11 (ext. 48.72)
Telex: 289696 (Attn Sales)
Telefax. (022)733.98.79

Taiwan – Formose
Good Faith Worldwide Int'l. Co. Ltd.
9th Floor, No. 118, Sec. 2
Chung Hsiao E. Road
Taipei Tel. 391 7396/391 7397
Telefax: (02) 394.9176

Thailand – Thaïlande
Suksit Siam Co. Ltd.
1715 Rama IV Road, Samyan
Bangkok 5 Tel. 251 1630

Turkey – Turquie
Kültur Yayinlari Is–Türk Ltd. Sti.
Atatürk Bulvari No. 191/Kat. 21
Kavaklidere/Ankara Tel. 25.07.60
Dolmabahce Cad. No. 29
Besiktas/Istanbul Tel. 160.71.88
Telex: 43482B

United Kingdom – Royaume–Uni
HMSO
Gen. enquiries Tel. (071) 873 0011
Postal orders only·
P.O Box 276, London SW8 5DT
Personal Callers HMSO Bookshop
49 High Holborn, London WC1V 6HB
Telex: 297138 Telefax: 071 873 8463
Branches at. Belfast, Birmingham, Bristol, Edinburgh, Manchester

United States – États–Unis
OECD Publications and Information Centre
2001 L Street N W., Suite 700
Washington, D C. 20036–4095 Tel. (202)785.6323
Telefax: (202)785.0350

Venezuela
Librería del Este
Avda F Miranda 52, Aptdo. 60337
Edificio Galipán
Caracas 106 Tel. 951.1705/951.2307/951 1297
Telegram. Libreste Caracas

Yugoslavia – Yougoslavie
Jugoslovenska Knjiga
Knez Mihajlova 2, P.O Box 36
Beograd Tel. 621.992
Telex. 12466 jk bgd

Orders and inquiries from countries where Distributors have not yet been appointed should be sent to: OECD Publications Service, 2 rue André–Pascal, 75775 Paris Cedex 16, France.
Les commandes provenant de pays où l OCDE n a pas encore désigné de distributeur devraient être adressées à OCDE, Service des Publications, 2, rue André–Pascal, 75775 Paris Cedex 16, France.

NUCLEAR LAW
Bulletin

S U P P L E M E N T T O No. 46

FRANCE

ACT No. 68-943 OF 30TH OCTOBER 1968 ON THIRD PARTY LIABILITY IN THE FIELD OF NUCLEAR ENERGY, AS AMENDED BY ACT No. 90-488 OF 16TH JUNE 1990

December 1990

ACT No. 68-943 OF 30TH OCTOBER 1968 ON THIRD PARTY LIABILITY IN THE FIELD OF NUCLEAR ENERGY, AS AMENDED BY ACT No. 90-488 OF 16TH JUNE 1990*

Section 1

The provisions of this Act lay down those measures which, pursuant to the Convention on Third Party Liability in the Field of Nuclear Energy signed in Paris on 29th July 1960, the Supplementary Convention signed in Brussels on 31st January 1963 and the Additional Protocols to those Conventions signed in Paris on 28th January 1964 and 16th November 1982, are left to the initiative of each Contracting Party.

Section 2

The provisions of this Act shall apply to any individuals or bodies corporate, public or private, operating a civil or military nuclear installation to which the Paris Convention applies, and which is regulated by the implementing Decrees made under Section 8 of Act No. 61-842 of 2nd August 1961 on Air Pollution and Odours and amending the Act of 19th December 1917.

In implementation of this Act, where several nuclear installations or a nuclear installation and any other installation where radioactive material is held have one operator and are located on the same site, they shall be treated as a single nuclear installation.

A Decree shall establish the procedure whereby a carrier meeting the requirements set forth in Section 7 may, in agreement with the operator of a nuclear installation, request that he be made liable under Section 4 in place of the operator.

Section 3 (Repealed)

Section 4

The maximum liability of the operator shall be 600 million francs per nuclear incident.

---

* Unofficial translation by the Secretariat.

However, the above amount may be reduced to 150 million francs per nuclear incident where only installations presenting a lower risk are operated on a given site. The characteristics of such installations shall be determined by decree following the published opinion of the Interministerial Committee for Large Nuclear Installations.

Section 5

Compensation in excess of the operator's liability shall be paid by the State under the conditions and within the limits specified in the Brussels Supplementary Convention.

In the case of installations for other than peaceful purposes, victims who under the terms of the Brussels Convention would have been entitled to compensation if the installation were for peaceful uses shall be compensated by the State, provided that the total compensation paid shall not exceed 2 500 million francs per incident.

Section 6

Operators shall inform the law agent to the Treasury of all claims for compensation.

Section 7

Each operator shall provide and maintain insurance or other financial security equal to the amount of his liability for a single incident. Any financial security must be approved by the Minister for Economic Affairs and Finance.

Upon the proposal of the Minister responsible for atomic energy, the Minister for Economic Affairs and Finance may provide a State guarantee for operators of nuclear installations and such guarantee shall, pro tanto, take the place of insurance or other financial security.

Insurers or any other persons who have provided financial security shall be required to give at least two months written notice to the Minister responsible for atomic energy before suspending or cancelling the insurance or security.

Section 8

If the victims of a nuclear incident are unable to recover compensation from the insurer, guarantor or operator, this shall be met in the last resort by the State, up to the limit set in Section 4 and without prejudice to the application of Section 5.

Section 9

Subject to the provisions of Section 9-2, the maximum liability of the operator in case of transport of nuclear substances shall be 150 million francs per nuclear incident.

Section 9-1

In the case of transport of nuclear substances between the territory of the French Republic and that of a State in which the Brussels Supplementary Convention is not in force, the operator of the nuclear installation situated in the territory of the French Republic sending or receiving the said substances shall, in accordance with the provisions of this Act, be liable for nuclear incidents occurring in the course of transport in the territory of the French Republic.

Section 9-2

It shall be a condition of the transport of nuclear substances in transit in the territory of the French Republic that the carrier provide proof of insurance or equivalent financial security to cover damage which may be caused by a nuclear incident in course of transport up to the amount established in Section 9 in the case of transport governed by the Paris Convention, and 1 500 million francs in other cases.

Section 9-3

In the case of international transport which is not covered by the Paris Convention, the carrier shall provide proof of the existence of financial security by furnishing a certificate from the insurer or any other person having provided the equivalent financial security, giving the name of the insurer or guarantor, his address, as well as the amount, type and duration of the security. The certificate shall also designate the nuclear substances and the itinerary covered by the security.

Where the international transport is covered by the Paris Convention, the certificate shall be established in accordance with Article 4(c) of that Convention.

A joint order by the Minister responsible for atomic energy and the Minister responsible for transport shall establish model certificates.

Section 10

As regards bodily injuries, a Decree issued after a report from the Minister responsible for atomic energy and the Minister for Social Affairs shall establish, having regard to the irradiation and the contamination received, and to the time elapsed before the disorder was observed, a non-restrictive list of disorders that shall be presumed to have been caused by the incident, in the absence of proof to the contrary.

Section 11

The provisional or final compensation actually paid to victims may not be recovered on account of the limits of liability and financial security provided for in Sections 4 and 5 above.

Section 12 (Repealed)

Section 13

If at the time of a nuclear incident it appears that the maximum sums available under this Act are likely to be insufficient to compensate for the whole of the damage sustained by the victims, a Decree made in Council of Ministers and published not later than six months after the date of the incident shall recognise this exceptional situation and specify the manner in which the sums referred to in Sections 4 and 5 above are to be disbursed.

Such a Decree may, inter alia, establish special control measures for the population in order to detect any such persons as may have sustained injury and, having regard to the insufficiency of the sums referred to in the previous paragraph and to the following order of priority, lay down rules for calculating the compensation to which each victim is entitled for bodily injury or damage to property.

In this event, the sums available under the present Act shall be allocated as follows:

a) priority shall be given to the compensation of bodily injuries, in manner to be determined by analogy with the legislation concerning industrial accidents;

b) any sums remaining after payment of the compensation aforesaid shall be allocated among the victims in proportion to any bodily injury left uncompensated and to damage to property, assessed in accordance with the principles of common law.

Section 14

Any victims sustaining damage shall be entitled to bring direct action against the insurer of the operator liable or any other person who has provided financial security.

The person compensating the victims shall have the rights of recourse to which the operator is entitled by virtue of the Conventions referred to in Section 1 above. In this event, the State shall have priority in recovering such sums as it may have disbursed.

Section 15

Claims for compensation must be brought within three years either of the date at which the person suffering damage has knowledge or from the date at which he ought reasonably to have known of both the damage and the operator liable; provided, however, that in no case may proceedings be instituted more than ten years after the incident.

In the event of an incident occurring within the territory of the French Republic and being recognised by the Paris Convention as falling within the jurisdiction of a French court, the State shall likewise pay compensation for damage which, having manifested itself more than ten years after the incident, cannot be claimed. Even in this case, the sum total of the compensation awarded, on whatever basis, shall not exceed the maximum amount established by this Act. Claims for compensation must be brought against the State no more than five years after expiration of the ten-year period specified in the foregoing paragraph.

Section 16

This Act does not derogate from the rules established by the legislation concerning social insurance and compensation for industrial injuries and occupational diseases and by the legislation on these subjects special to various occupations, more particularly as concerns proceedings.

Except in cases where the victim, having been employed by the operator at the time of the nuclear incident, has received compensation as for an industrial accident proper or an occupational disease, proceedings shall be instituted against the operator, his insurance company or the persons providing financial security.

Should a victim employed by the operator at the time the nuclear incident occurred receive compensation as for an industrial accident proper or an occupational disease, in respect of an incident caused by a person other than the operator or his agents and servants, the victim and the agency paying him insurance benefits shall be entitled to use their right of recourse against the person causing the incident, to pursue the operator.

Claims may be brought within the limits and subject to the conditions specified in Sections 4 and 5 above.

Section 17

In implementation of this Act, where the nuclear incident occurs in the territory of the French Republic or where, in implementation of the Paris Convention, a French court has jurisdiction, such jurisdiction shall lie only with the "Tribunal de Grande Instance de Paris".

However, the Public Prosecutor and the examining magistrate of the court within whose jurisdiction the nuclear incident occurred are empowered to take any emergency measures required. The records of proceedings are subsequently transferred to the "Tribunal de Grande Instance de Paris".

In no case shall a criminal court in which proceedings may be instituted entertain a civil claim.

Section 18

I. Failure to comply with the obligation to have and maintain insurance or other financial security as provided under Sections 7 and 9-2 above, shall make the offender liable to imprisonment from two months to five years or to a fine of 100 000 to 1 000 000 francs or to both.

Failure to furnish the certificate as provided under Section 9-3 above, shall make the offender liable to imprisonment from two months to one year or to a fine of 10 000 to 100 000 francs or to both.

II. If it is officially noted in a report that the operator or the carrier cannot furnish proof of insurance or financial security as provided under Sections 7, 9-2 and 9-3 above, the competent administrative authority may suspend operation of the installation or performance of the transport until provision of the proof required.

If operation of the installation or performance of the transport has been suspended, the competent administrative authority may take any measures to ensure the safety of persons and property at the expense of the operator or the carrier.

Section 19

The provisions of the present Act override the special rules concerning the prescription of claims against the State, departments, local administrations and public bodies.

Section 20

This Act shall apply to the overseas territories and to the "collectivité territoriale" of Mayotte.

Section 21 (Repealed)

Section 22

Until publication in the Official Gazette of the French Republic of the Protocol to amend the Brussels Convention, done in Paris on 16th November 1982, or after expiry of that Convention or withdrawal therefrom by the Government of the Republic, the additional compensation by the State provided for in the first paragraph of Section 5 above shall apply, in the amount of 2 500 million francs, only in respect of damage suffered in the territory of the French Republic.

Section 23

The whole of the provisions of the present Act shall cease to have effect upon termination of the Paris Convention, whether by withdrawal or by expiration.

Section 24 (Repealed)